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PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

SHERWIN WILLIAMS INCORPORATED CHICAGO, ILLINOIS

ILD 000 672 451

FINAL REPORT

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
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EXECUTIVE SUMMARY

Dynamac Corporation, performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the Sherwin Williams Incorporated (SWI) facility in Chicago, Illinois. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified.

The SWI facility is a research and development center that develops and tests coatings and paints for the automotive industry. The facility generates and manages the following waste streams; waste mixed monomers containing lead (D001, D008), waste organic bases (D001, D002), waste acid (D002), waste mixed solvents, resins, and paints containing various amounts of MIK, acetone, xylene, MEK, and toluene (F001, F002, F003, F005, D001, D035), waste paint sludge containing chromium and lead (D001, D007, D008), waste latex water (nonhazardous), waste water (nonhazardous), and large variety of unused hazardous chemicals (D001, D002, D003, D005, D008).

SWI has operated at its current location since 1960. The facility occupies approximately 8.3 acres in a mixed industrial/residential area and employs approximately 90 people. Prior to SWI ownership, the facility was occupied by Pullman Standard, an engineering company that designed and produced railroad cars.

The facility's current regulatory status is that of a large-quantity generator. According to SWI representatives, EPA did not require the facility to undergo RCRA-closure activities at the former RCRA-permitted unit, because SWI never stored hazardous wastes at the facility for greater than 90 days. There was no documentation available regarding EPA's waiver of the RCRA-closure activities.

The PA/VSI identified the following nine SWMUs at the facility:

Solid Waste Management Units

1. Lab Vent Hood Satellite Accumulation Containers
2. Paint Booth Satellite Accumulation Areas (SAAs)
3. Mill Room SAA
4. Hazardous Waste Storage Area "A"
5. Hazardous Waste Storage Area "B"
6. Former Hazardous Waste Storage Unit
7. Main Hazardous Waste Storage Area
8. Lab Pack Room
9. Sewer Catch Basins

There were no AOCs identified at the SWI facility.

There have been no documented releases or remediation activities at the facility. The facility maintains one 10,000-gallon No. 2 fuel oil underground storage tank (UST) for fueling boilers at the facility. The UST is equipped with a gauge used to monitor the inventory. Because there is no evidence of a loss of inventory or a release from the UST, it is not identified as an AOC.

The potential for a release to surface water from all facility SWMUs is low because surface water drainage at the facility is south towards storm sewers located in the parking lot. The storm sewers discharge to the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) for treatment prior to discharge to the Chicago River or the Little Calumet River. Therefore a release from the facility would not be likely to impact surface water. The nearest surface water body, Lake Calumet, is located approximately three-quarters of a mile east of the facility and is used for recreational and industrial purposes. Industrial uses of Lake Calumet include non-contact cooling water discharge and transportation. Lake Calumet is not used for drinking water purposes.

The potential for a release to ground water and on-site soils from SWMUs 1, 2, 3, 4, 5, 8, and 9 at the SWI facility is low. SWMUs 1, 2, 3, and 8 are all located inside the plant and the containers and drums are kept closed while not being filled. The potential for a release to migrate outside the plant is low. SWMUs 4 and 5 are located outside, but the wastes managed by these units are contained within closed 55-gallon drums. The drums are located on a grate on top of a box (spill container) to help contain any spills that may occur. SWMU 9 is used to collect a small amount of residual waste paint sludge contained within the waste water. Due to the small quantity of waste managed by this unit, there is a low potential for contaminants to migrate from this unit.

A release to ground water would not be likely to impact any human or environmental receptors because there are no known ground-water wells used as drinking water supplies in the city of Chicago. Potential receptors of a release to on-site soils are the 90 people currently employed at the SWI facility. The entire facility is fenced and SWI operates a microwave security system that monitors the perimeter of the plant. ADT Security Systems monitors the remainder of the property 24 hours per day, 7 days per week. The nearest residences are located on 108th street, one block north of the facility.

The potential for a past release to have impacted ground water, on-site soils, and air quality from SWMU 6 is low. Although the unit was located outdoors on a grassy area without a concrete pad and managed volatile wastes, there is no evidence of a past release and there are no documented releases. The potential for a future release to environmental media from SWMU 6 is low because SWI removed the tanker and drums in 1981.

SWMU 7 is located on a gravel pad between the boiler room and a parking area. The drums are not protected from being knocked over by vehicles in the parking area. If a spill were to occur, there is a moderate potential for a release to ground water, on-site soils and air.

The potential for a release to the air from SWMUs 2, 3, 4, 5, and 8 is low because they are managed in sound containers that are kept closed while not being filled. Although the waste water managed by SWMU 9 contains a small quantity of waste paint sludge (D001, D007, D008), it is likely that the constituents have volatilized by the time they are collected by this unit. Therefore the potential for a release to the air from SWMU 9 is also low. The potential for a release to the air from SWMU 1 is moderate to high because these units manage volatile wastes and the containers are not kept closed while not being filled. Due to the small quantities of volatile wastes managed outdoors, the potential receptors of a release to the air are the 90 people currently employed at the SWI facility.

There are no sensitive environments located near the facility. Sensitive environments within two miles of the SWI facility include approximately 30 small mapped wetland areas. About eight of these wetlands exceed 10 acres in size, and the remainder range from approximately 1 to 5 acres. The nearest wetland to the SWI facility is located at Mendel High School, approximately one quarter of a mile east of the facility. The wetland is an excavated open water pond that is approximately two acres in size. The wetlands in the surrounding area are principally ponds and marshes with non-woody emergent vegetation.

Dynamac recommends that SWI take several actions to reduce the potential for a release at the facility. The facility should keep the Lab Vent Hood Satellite Accumulation Containers (SWMU 1) closed while not being filled. At SWMU 7, Dynamac recommends that the facility construct a devise, such as a guard rail, to protect the drums from the vehicles in the adjacent parking area.

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. R05032 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in EPA Region 5. PRC assigned Dynamac Corporation (Dynamac), its TES 9 subcontractor, to conduct the PA/VSI for the Sherwin Williams Incorporated (SWI) facility in Chicago, Illinois.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for possible corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells

- Closed and abandoned units

- Recycling units, waste water treatment units, and other units that EPA has generally exempted from standards applicable to hazardous waste management units

- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading-unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release to the environment of hazardous waste or constituents has occurred or is suspected to have occurred on a non-routine and nonsystematic basis. This includes any area where such a release in the future is judged to be a strong possibility.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility.
- Obtain information on the operational history of the facility.
- Obtain information on releases from any units at the facility.
- Identify data gaps and other informational needs to be filled during the VSI.

The PA generally includes review of all relevant documents in files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA.
- Identify releases not discovered during the PA.
- Provide a specific description of the environmental setting.
- Provide information on release pathways and the potential for releases to each medium.
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases.

The VSI includes interviewing appropriate facility staff, inspecting the entire facility to identify all SWMUs and AOCs, photographing all SWMUs, identifying evidence of releases, initially identifying potential sampling locations, and obtaining all information necessary to complete the PA/VSI report.

This report documents the results of the PA/VSI of the Sherwin Williams Incorporated (SWI) facility located in Chicago, Illinois, EPA ID No. ILD 000 672 451. The PA was completed on December 19, 1991. Dynamac gathered and reviewed information from files at the Illinois Environmental Protection Agency (IEPA) Springfield, Illinois, office and from EPA Region 5 RCRA files.

Joseph Weslock and Valerie Farrell of Dynamac conducted the VSI on January 28, 1992. The VSI included an interview with SWI employees Sam Blais, Manager, Facilities & Administration, and Clarence Roberts, Mill Room Supervisor. The VSI also included a walk-through inspection of the facility. Dynamac observed nine SWMUs and no AOCs during the VSI.

The VSI is summarized along with 15 inspection photographs in Attachment A. Field notes from the VSI are included in Attachment B. A list of the unused hazardous chemicals disposed of in lab packs in 1989 is provided in Attachment C.

2.0 FACILITY DESCRIPTION

This section describes the facility's location, past and present operations (including waste management practices), waste generating processes, history of documented releases, regulatory history, environmental setting, and receptors.

2.1 FACILITY LOCATION

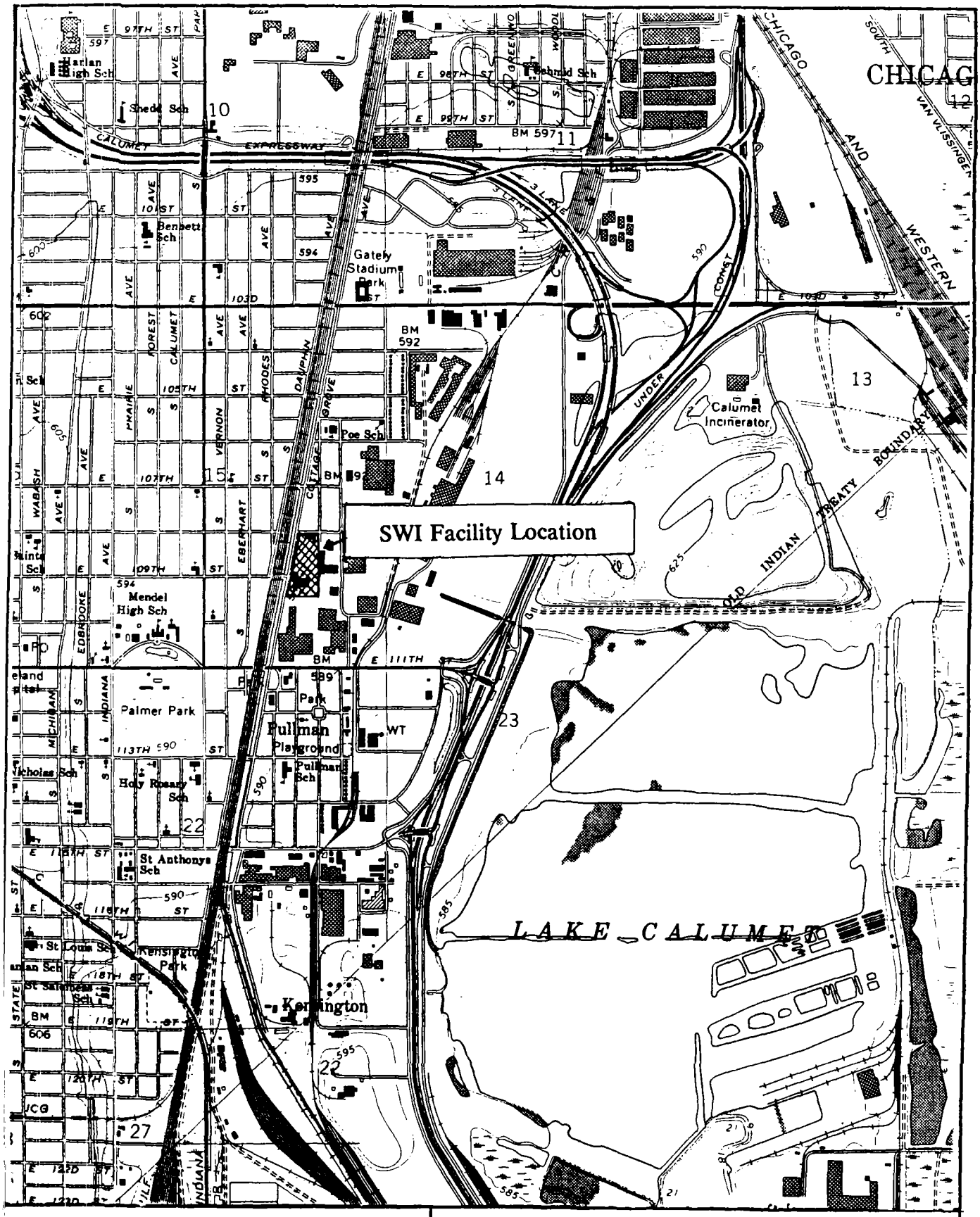
The SWI facility is located at 10909 South Cottage Grove Avenue in Chicago, Cook County, Illinois (latitude 41° 40' 48" N and longitude 87° 36' 31" W) as shown in Figure 1 (SWI, 1980b). The facility occupies approximately 8.3 acres in a mixed industrial/residential area.

The facility is bordered on the north by 108th Street and on the west by Cottage Grove Avenue. The Illinois Commuter Metro Railroad tracks are located just west of Cottage Grove Avenue. The facility is bordered by a large industrial complex on the south, and by a vacant building formerly owned by Weiss Steel on the east.

2.2 FACILITY OPERATIONS

The SWI facility is a research and development center that develops and tests coatings and paints for the automotive industry. The facility employs approximately 90 people, with about 75 of these people working in technical support, and the remaining 15 working in management and office support. The nature of business has remained basically the same since SWI began operations at this location in 1960. Prior to SWI ownership, the facility was occupied by Pullman Standard, an engineering company that designed and produced railroad cars. The facility grinds, blends, analyzes, and tests coatings and paints in a laboratory setting. After SWI develops an acceptable product in the labs, they mix a larger quantity (usually about 55 gallons) in the Resin Pilot Plant for further testing at other SWI facilities. Chemical products used to develop the coatings include the following: monomers, organic bases, acids, pigments, colors, resins, dryers, and solvents. SWI also uses a wide variety of hazardous lab chemicals in the development and testing of their products.

The facility contains three buildings including a main building (plant) which occupies approximately 70,000 feet^2, a Resin Pilot Plant which occupies approximately 2,500 feet^2, and a Solvent Storage Building occupying approximately 500 feet^2. The buildings occupy approximately one-fifth of the facility property and house all of the waste generating processes. The remainder of the facility is made up of parking areas and undeveloped grassy areas. The facility maintains one 10,000-gallon No. 2 fuel oil underground storage tank (UST) located outside, just west of the boiler room and is used for fueling boilers at the facility. The UST is equipped with a gauge used to monitor the inventory. According to facility representatives there is no evidence of a loss of inventory or a release from the UST.



Source: Modified from USGS, 1965

Scale: 1:24,000

North

Figure 1
Facility Location Map

The Lab Vent Hood Satellite Accumulation Containers (SWMU 1), which consist of either 1-gallon metal cans or 1-gallon plastic jugs, are used to accumulate hazardous wastes generated in the labs. The Paint Booth Satellite Accumulation Areas (SAAs) (SWMU 2) contain two 55-gallon drums used to accumulate hazardous wastes generated by the paint booths. The Mill Room SAA (SWMU 3) consists of three 55-gallon drums used to accumulate hazardous and nonhazardous wastes generated in the Mill Room. Hazardous Waste Storage Area "A" (SWMU 4) provides less than 90-day drum storage of hazardous waste generated in the polymer labs. Hazardous Waste Storage Area "B" (SWMU 5) provides less than 90-day drum storage of hazardous waste generated in the analytical labs. The Main Hazardous Waste Storage Area (SWMU 7) provides less than 90-day storage of hazardous waste generated throughout the facility.

The Lab Pack Room (SWMU 8), located on the east side of the plant, is used for the collection of unused hazardous chemicals (D001, D002, D003, D005, D008) generated in the labs. The wastes are either accumulated in their original bottles or in containers appropriate for the waste.

The Sewer Catch Basins (SWMU 9) are used to trap any residual paint sludge that may be contained in the waste waster (nonhazardous) that is discharged to the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC).

Prior to 1980, the majority of the wastes generated at the facility were managed by the Former Hazardous Waste Storage Unit (SWMU 6); the unused hazardous chemicals were not managed by this unit. The unit was located north of the plant and consisted of a 5,000-gallon portable tanker and a drummed waste storage area. SWI stopped using the unit in approximately 1981, when they removed the tanker and drums from the facility.

Facility SWMUs are identified in Table 1. The facility layout, including SWMU locations, is included as Figure 2. The approximate facility boundaries are identified in Figure 3. The wastes and SWMUs will be discussed in greater detail in Section 2.3.

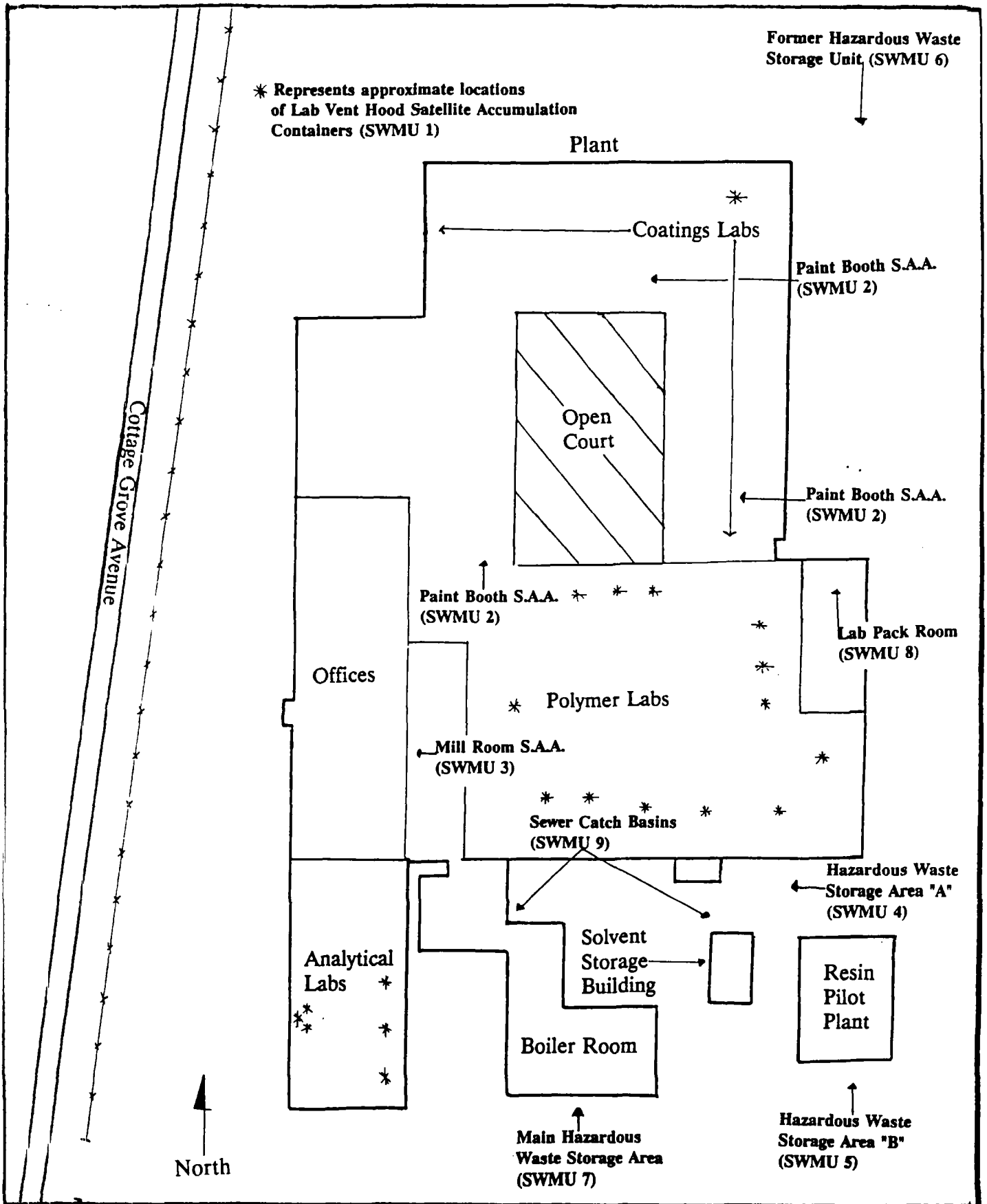
2.3 WASTE GENERATING PROCESSES

SWI conducts research, development, and testing of coatings at this facility. The facility grinds, blends, analyzes, and tests coatings and paints in a laboratory setting. Chemical products used to develop the coatings include: monomers, organic bases, acids, pigments, colors, resins, dryers, and solvents. The facility generates the following wastes: waste mixed monomers (D001, D008); waste organic bases (D001, D002); waste acid (D002); waste mixed solvents, resins, and paints (F001, F002, F003, F005, D001, D035); waste paint sludge (D001, D007, D008); waste latex water (nonhazardous); waste water (nonhazardous); and unused hazardous chemicals (D001, D002, D003, D005, D008). Attachment C contains a list of the unused hazardous chemicals and the quantities shipped in 1989.

TABLE 1
SOLID WASTE MANAGEMENT UNITS (SWMU)

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit*	Status
1	Lab Vent Hood Satellite Accumulation Containers	No	Active, satellite accumulation of hazardous wastes
2	Paint Booth SAAs	No	Active, satellite accumulation of hazardous wastes
3	Mill Room SAA	No	Active, satellite accumulation of hazardous wastes
4	Hazardous Waste Storage Area "A"	No	Active, less than 90 day storage of hazardous wastes
5	Hazardous Waste Storage Area "B"	No	Active, less than 90 day storage of hazardous wastes
6	Former Hazardous Waste Storage Unit	Yes	Inactive, not formally RCRA-closed
7	Main Hazardous Waste Storage Area	No	Active, less than 90 day storage of hazardous wastes
8	Lab Pack Room	No	Active, less than 90 day storage of hazardous wastes
9	Sewer Catch Basins	No	Active, for collection of hazardous waste (not storage)

* A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.

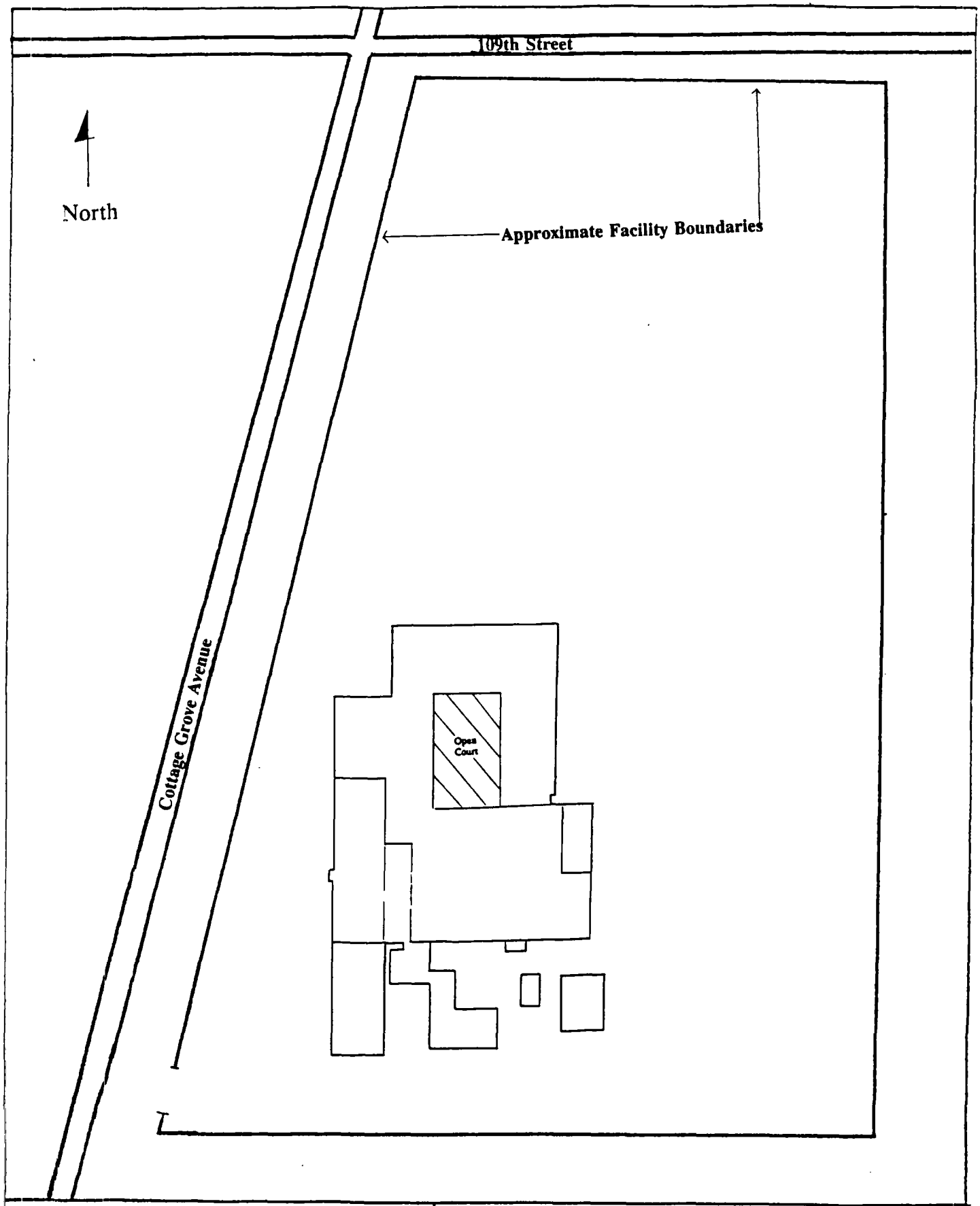


Source: Modified from SWI, 1991

Scale: 20 feet

Figure 2

Facility Layout Map



Source: Modified from SWI, 1991

Scale: ~45 feet

Figure 3
Facility Boundary Map

Wastes generated at the facility are discussed below and summarized in Table 2. Because 1991 annual generation rates were not available at the time of the VSI, annual generation rates presented are based on 1990 waste generation data (SWI, 1990). According to facility representatives, the 1991 annual generation rates are expected to be comparable to the 1990 annual generation rates.

Waste mixed monomers containing lead (D001, D008) are generated in the polymer labs and accumulated in the Lab Vent Hood Satellite Accumulation Containers (SWMU 1) (See Photo Nos. 1, 2, 3, and 4). After a 1-gallon container in SWMU 1 is filled, an SWI employee takes it to Hazardous Waste Storage Area "A" (SWMU 4) (See Photo No. 10), where it is accumulated in a 55-gallon drum for less than 90 days prior to shipment off site as hazardous waste. The waste is taken to Petro Chem in Detroit, Michigan for incineration. SWI generated approximately 1,430 gallons of waste mixed monomers in 1990 (SWI, 1990).

Waste organic bases (D001, D002) are generated in the polymer labs and accumulated in the Lab Vent Hood Satellite Accumulation Containers (SWMU 1) (See Photo Nos. 1, 2, 3, and 4). After a 1-gallon container in SWMU 1 is filled, an SWI employee takes it to Hazardous Waste Storage Area "A" (SWMU 4), where it is accumulated in a 55-gallon drum for less than 90 days prior to shipment off site as hazardous waste. The waste is taken to Petro Chem in Detroit, Michigan for incineration. SWI generated approximately 165 gallons of waste organic bases in 1990 (SWI, 1990).

Waste acid (D002) is generated in the analytical labs and accumulated in a Lab Vent Hood Satellite Accumulation Container (SWMU 1). After a 1-gallon container in SWMU 1 is filled, an SWI employee takes it to the Main Hazardous Waste Storage Area (SWMU 7) (See Photo No. 13). The waste is stored in SWMU 7 for less than 90 days prior to shipment off site to the Clean Harbors facility in Braintree, Massachusetts for neutralization and disposal. SWI generated approximately 55 gallons of waste acid (D002) in 1990 (SWI, 1990).

Waste mixed solvents, resins, and paints containing various amounts of methyl isobutyl ketone (MIK), acetone, xylene, methyl ethyl ketone (MEK), and toluene (F001, F002, F003, F005, D001, D035) is generated throughout the plant. This waste is managed by different SWMUs depending on where it is generated. Waste generated in the analytical labs is accumulated in a Lab Vent Hood Satellite Accumulation Container (SWMU 1). When a container is full, an SWI employee pours it in a 55-gallon drum in Hazardous Waste Storage Area "B" (SWMU 5) (See Photo No. 11). Waste generated in the polymer labs is accumulated in a Lab Vent Hood Satellite Accumulation Container (SWMU 1). When a container is full, an SWI employee pours it in a 55-gallon drum in Hazardous Waste Storage Area "A" (SWMU 4). Waste generated in the coatings labs is accumulated in a Lab Vent Hood Satellite Accumulation Container (SWMU 1). When a container is full, an SWI employee pours it in a 55-gallon drum in the Main Hazardous Waste Storage Area (SWMU 7). Waste generated in the paint booths is accumulated in a 55-gallon drum in one of the Paint Booth SAAs (SWMU 2) (See Photo Nos. 5, 6, 7, and 8). When the drum is full, an

SWI employee dates it and takes it to the Main Hazardous Waste Storage Area (SWMU 7). The wastes are stored at each of the storage areas for less than 90 days prior to shipment off site for disposal as hazardous waste. The waste is transported to Heritage Environmental Services Inc. in Lemont, Illinois for fuel blending. SWI generated 6,279 gallons of waste mixed solvents, resins, and paints in 1990 (SWI, 1990).

Waste paint sludge (D001, D007, D008) is generated by the three water-wash paint booths inside the plant. SWI daily adds a surfactant, which causes the solids (paints and pigments) to float. An SWI employee then removes the floating waste from the water-wash paint booths and places it in an adjacent 55-gallon drum in the Paint Booth SAA (SWMU 2). When a drum is full, an SWI employee dates it and takes it to one of the drummed waste storage areas (SWMUs 4, 5, and 7), where waste is stored for less than 90 days prior to shipment off site for disposal as hazardous waste. The waste paint sludge is transported by Heritage Environmental Services, Inc., to Chem Met Services in Wyandotte, Michigan for incineration. SWI generated 550 gallons of waste paint sludge in 1990 (SWI, 1990).

Waste water (nonhazardous) is generated by the three water-wash paint booths. Approximately once every six to eight weeks, SWI discharges about 500 gallons of waste water from each of the water-wash paint booths. The waste water is discharged through Sewer Catch Basins (SWMU 9) to the MWRDGC. SWMU 9 is used to trap any residual waste paint sludge (D001, D007, D008) that may be contained in the waste water. About every four to five years, SWI removes the sludge from SWMU 9 and places it in a 55-gallon drum which is taken to the Main Hazardous Waste Storage Area (SWMU 7). The sludge is shipped off site with the rest of the waste paint sludge (D001, D007, D008) to Chem Met Services in Wyandotte, Michigan for incineration. SWI collects less than 55 gallons of sludge from SWMU 9 every four to five years. The MWRDGC requires SWI to test the waste water once per year for biochemical oxygen demand (BOD), and suspended solids. According to SWI representatives, they have never exceeded the allowable limits for either of the two parameters. SWI discharged approximately 17,000 gallons of waste water per day in 1990.

Waste latex water (nonhazardous) is generated by cleaning tools and containers that are used to mix latex paint in the Mill Room. The waste is collected in a 55-gallon drum in the Mill Room SAA (SWMU 3). When a drum is full, an SWI employee takes it to the Main Hazardous Waste Storage Area (SWMU 7) where it is shipped as nonhazardous waste to Chem Met Services in Wyandotte, Michigan for solidification and disposal. SWI generated approximately twelve 55-gallon drums of waste latex water in 1990.

SWI uses a variety of hazardous chemicals in the development and testing of their products. Approximately once every two years, SWI brings all of the unused hazardous chemicals to the Lab Pack Room (SWMU 8) (See Photo No. 14). The unused hazardous chemicals are not considered wastes until they are brought to the Lab Pack Room. A contractor then sorts the wastes into compatible groups, packs them into containers, and packages the containers in vermiculite in 55-gallon drums. Because SWI generates such

a wide variety of these wastes every two years, an annual generation rate of each waste could not be estimated. This waste is transported off site by Great Lakes Environmental Services and incinerated at PSC Environmental Services in Pecatonica, Illinois. Attachment C contains a list of the unused hazardous chemicals and quantities shipped off site in 1989.

In the past, all of the hazardous wastes generated at the facility were accumulated in the Former Hazardous Waste Storage Unit (SWMU 6) (See Photo No. 12). The unit consisted of a 5,000-gallon portable tanker and an adjacent drummed waste storage area. All of the compatible wastes generated at the facility were combined in a 5,000-gallon portable tanker. The incompatible wastes were accumulated in 55-gallon drums in the drummed waste storage area. The unused hazardous chemicals were not managed by this SWMU. SWI removed the tanker and the drum in approximately 1981, but did not undergo a formal RCRA-closure. According to facility representatives, SWI never used this unit to store wastes for greater than 90 days and therefore was not required by EPA to implement RCRA-closure.

2.4 HISTORY OF DOCUMENTED RELEASES

There is no history of documented releases at the SWI facility. There is no documentation of complaints from nearby residents.

2.5 REGULATORY HISTORY

SWI submitted a notification of hazardous waste activity (Notification) to EPA on August 14, 1980 (SWI, 1980a). The facility submitted a RCRA Part A permit application on November 18, 1980 (SWI, 1980b). The Part A listed the facility as having tank storage (S02) capacity of 2,000 gallons and container storage (S01) capacity of 800 gallons. The Part A also listed the facility as generating a total of approximately 7,000 pounds of F002, F003, and F005, wastes and 18,000 pounds of K079 (no longer a listed waste) wastes. In a February 17, 1983, letter to IEPA, SWI requested that their Part A application be withdrawn and that their status be changed from a generator and storage facility to a generator. The letter also states that SWI applied as a generator and storage facility as a precautionary measure, and did not store wastes at the facility for greater than 90 days (SWI, 1983).

The Part A identified the Former Hazardous Waste Storage Unit (SWMU 6) as the RCRA permitted unit. According to facility representatives, the unit actually consisted of a 5,000-gallon portable tanker and a drummed waste storage area. SWI removed the portable tanker and the drums from the facility in 1981. According to facility representatives, EPA did not require them to undergo RCRA-closure activities because SWI never stored wastes at the facility for greater than 90 days. There was no documentation available regarding EPA's waiver of the RCRA-closure activities or the facility's change in status. The next available documentation, a January 1985 RCRA inspection report prepared by IEPA, identifies the facility as a generator (IEPA, 1985). The facility currently operates as a generator, storing hazardous wastes at the facility for less than 90 days.

The IEPA conducted RCRA compliance inspections in January 1985 and August 1987; inspectors noted violations regarding the contingency plan, and the management and labeling of drums of hazardous waste (IEPA, 1985; IEPA, 1987). SWI submitted documentation of corrective action to the IEPA for the violations that were noted during the RCRA inspections (SWI, 1985). According to a February 5, 1988, letter from IEPA to Mr. Blais of SWI, the apparent violations at the facility had been resolved at that time (IEPA, 1988).

On July 1, 1991, IEPA, Division of Air Pollution Control (APC), conducted an inspection at the SWI facility; this was the first APC inspection conducted at the facility. The inspector cited SWI for operating five emission sources without an operating permit. These sources included four boilers for heating the building and one 10,000-gallon No. 2 fuel oil underground storage tank (UST) (IEPA, 1991a). IEPA subsequently granted SWI a five-year operating permit on October 1, 1991 (IEPA, 1991b). According to facility representatives, there have been no APC inspections at the facility since 1991.

The facility does not have any discharges to surface water and is therefore not required to have a National Pollutant Discharge Elimination System (NPDES) permit. The facility generates waste water at the three water-wash paint booths inside the plant. Approximately once every six to eight weeks, SWI discharges about 500 gallons of waste water from each of the water-wash paint booths. The waste water is discharged through Sewer Catch Basins (SWMU 9) (See Photo No. 15) to the MWRDGC. The MWRDGC requires SWI to test the waste water once per year for biochemical oxygen demand (BOD), and suspended solids. According to SWI representatives, the facility has never exceeded the allowable limits for either of the two parameters. The facility discharged a total of approximately 17,000 gallons of waste water per day in 1990. This total includes the waste water from the water-wash paint booths, the labs, and facility wide sanitary water.

There is no documentation of any Superfund activity at the SWI facility.

2.6 ENVIRONMENTAL SETTING

This section describes the climate, flood plain and surface water, geology and soils, and ground water in the vicinity of the SWI facility.

2.6.1 Climate

The SWI facility is located approximately 21 miles southeast of O'Hare International Airport, the nearest National Weather Service station. The climate in this area is continental with cold winters and warm summers. Lake Michigan, located approximately five miles east of the facility, has a moderating influence on temperature extremes. The average annual daily temperature is 49.2° Fahrenheit (F). The highest average daily temperature is 73.0° F in July, and the lowest average daily temperature is 21.4° F in January. Mean annual precipitation is 33.34 inches (NOAA, 1990). Mean annual lake

evaporation is approximately 30 inches and net annual precipitation is approximately 3 inches. The one-year 24-hour maximum rainfall is approximately 2.4 inches (NOAA, 1979). The prevailing wind is from the west-southwest. Average wind speed is highest in April at an average of 12 miles per hour from the west-southwest (NOAA, 1990).

2.6.2 Flood Plain and Surface Water

The SWI facility and all SWMUs are in an area of minimal flooding outside of any 100-year or 500-year flood plain (FEMA, 1981). The nearest surface water body, Lake Calumet, is located three-quarters of a mile east of the facility and is used for recreational and industrial purposes. There are no surface water intakes for drinking water or industrial purposes in Lake Calumet (IEPA, 1992). Lake Calumet discharges to Lake Michigan via the Calumet River.

Surface water drainage at the facility is south towards storm sewers located in the parking lot. The storm sewers discharge to the MWRDGC for treatment prior to discharge to the Chicago River or the Little Calumet River (CSD, 1992).

The Little Calumet River is located approximately 3 miles south of the facility. The Little Calumet River is not used for drinking water purposes, but is used for both industrial and recreational purposes (IEPA, 1992). There are no sensitive environments located on site. Sensitive environments within two miles of the SWI facility include approximately 30 small mapped wetland areas. About eight of these wetlands exceed 10 acres in size, and the remainder range from approximately one to five acres. The nearest wetland to the SWI facility is located approximately one-quarter of a mile east of the facility. The wetland is approximately two acres in size and consists of an excavated open water pond with an unknown bottom. The wetlands in the surrounding area are principally ponds and marshes with non-woody emergent vegetation (USDI, undated).

2.6.3 Geology and Soils

There has been no Soil Conservation Service mapping of the soils in the vicinity of the SWI facility. The surficial geological deposits are lacustrine deposits of the Carmi Member of the Equality Formation deposited in the late Pleistocene Epoch. These deposits are composed of well-bedded silt and clay typical of off-shore environments. The lacustrine deposits overlie the Wadsworth Till Member of the Wedron Formation. The Wadsworth Till is a gray, clayey till with a few pebbles and cobbles and occasional sand and gravel lenses (Lineback, 1979). The total thickness of the unconsolidated deposits is approximately 75 feet (Cravens and Zahn, 1990).

The uppermost bedrock in the vicinity if the SWI facility is dolomite of the Silurian-age Niagran and Alexandrian Series. The upper Niagran Series is characterized by large massive reef complexes of nearly pure dolomite, with some argillaceous zones between the reefs. The lower Alexandrian Series is composed of well-bedded cherty and argillaceous

dolomite in a variety of colors (Willman, 1971). The total thickness of the Silurian dolomites in this area is approximately 350 feet (Hughes, Kraatz, and Landon, 1966).

Underlying the dolomite is the Ordovician-age Maquoketa Shale. The Maquoketa Shale is red and oolitic near the top, and gray green, with some interbedded shaley limestone at depth. Underlying the Maquoketa Shale is several thousand feet of Ordovician-age and Cambrian-age sandstones and limestones.

2.6.4 Ground Water

There are three aquifers in the vicinity of the SWI facility: a shallow, discontinuous drift aquifer; a shallow bedrock aquifer; and a deep bedrock aquifer. The shallow drift aquifer occurs in sand and gravel lenses in the Wadsworth Till, and in sandy beach deposits in the Dolton Member of the Equality Formation, which does not occur at the facility, but is present in the area. This aquifer is discontinuous because the sandy deposits are localized. The clayey till is not an aquifer. The depth to ground water in the shallow drift aquifer is less than 10 feet. Ground-water flow in the area is east towards Lake Calumet (Cravens and Zahn, 1990). There are no public water supply wells in the vicinity of the SWI facility.

The shallow bedrock aquifer is the Silurian dolomite. This aquifer is a leaky artesian aquifer in much of the area because the overlying clayey till is a confining layer. Regional ground-water flow in this aquifer is east and southeast and measured hydraulic conductivities average 1×10^{-4} centimeters per second. In the past, this aquifer was used extensively for industrial water supplies in the south Chicago area; the current usage is a small fraction of what it was in the 1970s (Cravens and Zahn, 1990). The location of these industrial wells is undocumented. According to Robert McDougal of the Chicago Water Department (CWD), there are no longer any ground-water wells in the City of Chicago that are used for drinking water purposes (CWD, 1992).

The deep bedrock aquifer consists of the Ordovician-age and the Cambrian-age limestones and sandstones underlying the Maquoketa Shale, which serves as a confining layer. Ground-water flow direction in this aquifer is generally east, but locally influenced by pumpage (Schict, Adams and Stall, 1976). There is currently no significant pumpage from this aquifer in the vicinity of the SWI facility (Cravens and Zahn, 1990).

2.7 RECEPTORS

The SWI facility occupies approximately 8.3 acres in a mixed industrial/residential area in Chicago, Illinois, which has a 1991 population of 2,783,726 persons (State of Illinois, 1991).

An industrial area borders the facility in the east and south, and a residential area borders it on the north and west. The nearest school, Mendel High School, is located about

one-quarter mile east of the facility (USGS, 1965). The nearest residences are located just north of the facility on 108th Street. The entire facility is fenced; access to the facility is from Cottage Grove Avenue through a gate located at the southwest corner. SWI operates a microwave security system that monitors the perimeter of the plant. ADT security systems monitors the remainder of the property 24 hours per day, 7 days per week. Potential receptors of a release to on-site soils are the 90 people currently employed at the SWI facility.

The nearest surface water body, Lake Calumet, is located approximately three-quarters of a mile east of the facility (USGS, 1965) and is used for recreational and industrial purposes. The industrial uses of Lake Calumet include non-contact cooling water discharges and transportation (IEPA, 1992). Lake Calumet does not have any surface water intakes for drinking water or industrial purposes (CWD, 1992). Other surface water bodies in the area include the Little Calumet River located approximately 3 miles south of the facility. The Little Calumet River is used for industrial and recreational purposes, but is not used for drinking water purposes. There are both industrial surface water intakes and industrial waste water discharges in the Little Calumet River (IEPA, 1992). Because the nearest surface water body is over three-quarters of a mile from the facility, a release from the facility would not be likely to impact surface water.

There are no known ground-water wells used as drinking water supplies in the City of Chicago (CWD, 1992). A release to ground water would not be likely to impact any human or environmental receptors.

There are no sensitive environments located at the SWI facility. Sensitive environments within two miles of the SWI facility include approximately 30 small mapped wetland areas. The largest wetlands are in the area surrounding Lake Calumet and total some 500 acres in area. The remainder of the wetlands range from approximately one to five acres. The nearest wetland to the SWI facility is located approximately one-quarter of a mile east of the facility. The wetland is approximately two acres in size and consists of an excavated open water pond with an unknown bottom. The wetlands in the surrounding area are principally ponds and marshes with non-woody emergent vegetation (USDI, undated).

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the nine SWMUs identified during the PA/VSI. The following information is presented for each SWMU; description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and Dynamac's observations. Figure 2 shows the SWMU locations.

SWMU 1 **Lab Vent Hood Satellite Accumulation Containers**

Unit Description: The Lab Vent Hood Satellite Accumulation Containers are located inside the polymer, analytical and coatings labs. The facility operates approximately 56 lab vent hoods (hoods) with approximately 20 of these hoods containing Lab Vent Hood Satellite Accumulation Containers. The units are used to accumulate hazardous waste generated in the labs. The unit consists of one to two 1-gallon metal cans or 1-gallon plastic jugs located within the lab vent hoods (See Photo Nos. 1, 2, 3, and 4).

Date of Startup: These units were first used in approximately 1989.

Date of Closure: These units are currently active.

Wastes Managed: The units are used to accumulate hazardous waste generated in the three labs. Wastes include waste mixed monomers (D001, D008), waste organic bases (D001, D002), waste acid (D002), and waste mixed solvents, resins, and paints (F001, F002, F003, F005, D001, D035). Wastes from each unit are transferred to other SWMUs. When a unit located in the analytical lab is full, an SWI employee pours the contents into a 55-gallon drum located in Hazardous Waste Storage Area "B" (SWMU 5). When a unit located in the polymer lab is full, an SWI employee pours the contents into a 55-gallon drum located in Hazardous Waste Storage Area "A" (SWMU 4). When a unit located in the coatings lab is full, an SWI employee pours the contents into a 55-gallon drum located in the Main Hazardous Waste Storage Area (SWMU 7).

Release Controls: The units are located indoors and contained within the lab vent hoods, which vent the volatile constituents outside of the building.

History of Documented Releases:	There are no documented releases from this unit.
Observations:	During the VSI, Dynamac observed approximately 20 Lab Vent Hood Satellite Accumulation Containers. Each of the containers observed was between one-quarter full and three-quarter full and appeared to be in sound condition. Dynamac notes that the majority of the containers observed were labeled with the words "hazardous waste," but were not closed or labeled with the constituents of concern (See Photo Nos. 1, 2, 3, and 4).
SWMU 2	**Paint Booth SAAs**
Unit Description:	There is a Paint Booth SAA adjacent to each of the three paint booths inside the plant. The unit is used for the accumulation of wastes generated by operating and cleaning the paint booths. Each unit consists of one 55-gallon drum used for the collection of waste paint sludge (D001, D007, D008), and one 55-gallon drum used for the collection of waste mixed solvents, resins, and paints (F001, F002, F003, F005, D001, D035) (See Photo Nos. 5, 6, 7, and 8).
Date of Startup:	These units were first used in approximately 1981.
Date of Closure:	These units are currently active.
Wastes Managed:	This unit handles ignitable waste paint sludge containing chromium and lead (D001, D007, D008). This unit also handles waste mixed solvents, resins and paints containing various amounts of MIK, acetone, xylene, MEK, and toluene, (F001, F002, F003, F005, D001, D035). When a 55-gallon drum is full, an SWI employee dates it and takes it to the Main Hazardous Waste Storage Area (SWMU 7), where it is stored for less than 90 days prior to shipment off site as hazardous waste.
Release Controls:	The 55-gallon steel drums are located inside and kept closed when they are not being filled. There are no floor drains in the plant.
History of Documented Releases:	There are no documented releases from this unit.

Observations:	Dynamac observed three Paint Booth SAAs during the VSI. The drums located at two of the SAAs were labeled with the words "hazardous waste" and listed the constituents of concern. The drums at the other SAA were not labeled.
SWMU 3	**Mill Room SAA**
Unit Description:	The Mill Room SAA is located inside the plant in the Mill Room where paints and coatings are ground and mixed. The unit consists of an area containing three 55-gallon drums; one drum is used for the collection of waste latex water (nonhazardous), and two are used for the collection of waste mixed solvents, resins, and paints (See Photo No. 9).
Date of Startup:	This unit was first used in approximately 1981.
Date of Closure:	This unit is currently active.
Wastes Managed:	This unit manages waste latex water (nonhazardous) generated by cleaning tools and containers that are used to mix latex paint. The unit also manages waste mixed solvents, resins, and paints containing various amounts of MIK, acetone, xylene, MEK, and toluene, (F001, F002, F003, F005, D001, D035). When a drum of hazardous waste is full, an SWI employee dates it and takes it to the Main Hazardous Waste Storage Area (SWMU 7), where it is shipped off site for disposal in less than 90 days. When the drum of waste latex water is full, it is also brought to SWMU 7, where it is shipped off site as nonhazardous waste.
Release Controls:	The 55-gallon steel drums are located inside the plant and kept closed when they are not being filled. There are no floor drains in the Mill Room.
History of Documented Releases:	There are no documented releases from this unit.
Observations:	Each of the three 55-gallon drums observed at this unit was approximately one-half full and labeled. The labels on the two drums of waste mixed solvents, resins, and paints identified the waste as hazardous and listed the constituents of concern. The other drum was labeled as waste latex water. Dynamac notes that the two 55-gallon drums of waste mixed solvents, resins and

paints were both in the process of being filled at the time of the VSI.

SWMU 4 **Hazardous Waste Storage Area "A"**

Unit Description: Hazardous Waste Storage Area "A" is located between the plant and the Resin Pilot Plant (See Figure 2). This unit is used to collect the hazardous waste generated in the polymer labs. The unit is approximately 40 square-feet in area and contained six 55-gallon drums.

Date of Startup: This unit was first used in approximately 1981.

Date of Closure: This unit is currently active.

Wastes Managed: This unit manages hazardous wastes generated in the polymer labs. The waste include waste mixed monomers containing lead (D001, D008), waste organic bases (D001, D002), waste mixed solvents, resins and paints containing various amounts of MIK, acetone, xylene, MEK, and toluene, (F001, F002, F003, F005, D001, D035), and waste paint sludge containing chromium and lead (D001, D007, D008). The wastes from this SWMU are shipped off site for disposal.

Release Controls: This unit is located outdoors and the wastes are contained in closed 55-gallon steel drums. The drums were located on a grate on top of a box (spill container) to help contain any spills that may occur (See Photo No. 10).

History of Documented Releases: There are no documented releases from this unit.

Observations: At the time of the VSI this unit contained six partially filled, closed 55-gallon drums of hazardous wastes. The drums were labeled, appeared to be in sound condition, and were located on a spill container. The labels identified the waste as hazardous and listed the constituents of concern. The drums were not completely filled and did not contain accumulation start dates.

SWMU 5	**Hazardous Waste Storage Area "B"**
Unit Description:	Hazardous Waste Storage Area "B" is located outside the plant south of the Resin Pilot Plant (See Figure 2). This unit is used to collect the hazardous waste generated in the analytical labs. The unit is approximately 40-square feet in area and contained four 55-gallon drums of waste. The drums were located on a spill container to help contain any spills that may occur (See Photo No. 11)
Date of Startup:	This unit was first used in 1990. Prior to 1990, the wastes managed by this unit were managed at the Main Hazardous Waste Storage Area (SWMU 7).
Date of Closure:	This unit is currently active.
Wastes Managed:	This unit manages hazardous wastes generated in the analytical labs. The waste include the following: waste mixed monomers containing lead (D001, D008); waste mixed solvents, resins, and paints containing various amounts of MIK, acetone, xylene, MEK, and toluene, (F001, F002, F003, F005, D001, D035); and waste paint sludge containing chromium and lead (D001, D007, D008). The wastes from this SWMU are shipped off site for disposal.
Release Controls:	This unit is located outdoors and the wastes are contained in closed 55-gallon steel drums. The drums were located on a grate on top of a box (spill container) to help contain any spills that may occur (See Photo No. 11).
History of Documented Releases:	There are no documented releases from this unit.
Observations:	At the time of the VSI this unit contained four partially filled, closed 55-gallon drums of hazardous wastes. The drums were labeled, appeared to be in sound condition, and were located on a spill container. The labels identified the waste as hazardous and listed the constituents of concern. The drums were not completely filled and did not contain accumulation start dates.

SWMU 6	**Former Hazardous Waste Storage Unit**
Unit Description:	The Former Hazardous Waste Storage Unit was located outside the northeast corner of the plant (See Figure 2). The unit consisted of a 5,000-gallon portable steel tanker and a drummed waste storage area. The unit was used to accumulate the majority of the hazardous waste generated at the facility prior to 1981. The Part A listed the facility as having tank storage capacity of 2,000 gallons and container storage capacity of 800 gallons (SWI, 1980b).
Date of Startup:	This unit was first used in approximately 1961.
Date of Closure:	SWI removed the tanker and drums from the facility in approximately 1981, but there is no documentation of the removal activities. According to facility representatives, the EPA did not require SWI to prepare a RCRA closure plan or implement RCRA-closure because the unit was never used to store hazardous wastes for greater than 90 days. There is no documentation available of EPA's waiver of the closure activities. In 1985, IEPA identified SWI as a generator only (IEPA, 1985).
Wastes Managed:	All of the compatible wastes generated at the facility were combined in a 5,000-gallon portable tanker. The incompatible wastes were accumulated in 55-gallon drums in the drummed waste storage component of this unit. According to facility representatives, wastes from this unit were shipped off site as hazardous waste. The Part A listed the facility as generating a total of approximately 7,000 pounds of F002, F003, F005 wastes, and 18,000 pounds of K079 wastes.
Release Controls:	The drums and tanker were constructed of steel and kept closed while not being filled.
History of Documented Releases:	There are no documented releases from this unit.
Observations:	Dynamac observed the unpaved ground where the unit was formerly located (See Photo No. 12). The area was covered by vegetation and there was no evidence of a previous release.

SWMU 7	**Main Hazardous Waste Storage Area**
Unit Description:	The Main Hazardous Waste Storage Area is located outdoors, just south of the boiler room (See Figure 2). This unit is used to collect some of the hazardous wastes generated at the facility. The unit is approximately 30 feet by 10 feet and contained six 55-gallon drums of waste. The drums were located on a gravel pad adjacent to the boiler room (See Photo No. 13).
Date of Startup:	This unit was first used in approximately 1981.
Date of Closure:	This unit is currently active.
Wastes Managed:	This unit manages the following wastes: waste mixed monomers containing lead (D001, D008); waste acid (D002); waste organic bases (D001, D002); waste mixed solvents, resins, and paints containing various amounts of MIK, acetone, xylene, MEK, and toluene, (F001, F002, F003, F005, D001, D035); waste paint sludge containing chromium and lead (D001, D007, D008); and waste latex water (nonhazardous). Wastes from this unit are ultimately shipped off site for disposal.
Release Controls:	The wastes are contained within closed 55-gallon drums that are located adjacent to the boiler room.
History of Documented Releases:	There are no documented releases from this unit.
Observations:	At the time of the VSI this unit contained six closed 55-gallon drums of hazardous wastes. The drums were labeled, dated, and appeared to be in sound condition. The labels identified the waste as hazardous and listed the constituents of concern. The accumulation start dates on each drum indicated that the wastes were stored in this unit for less than 90 days. Dynamac notes that the drums are not protected from the vehicles in the parking area adjacent to the unit.

SWMU 8	**Lab Pack Room**
Unit Description:	SWI uses a variety of hazardous chemicals in the development and testing of their products. According to facility representatives, about once every two years, SWI distributes an inventory of the unused hazardous chemicals currently located at the facility to various contractors. SWI then selects a contractor and brings all of the unused hazardous chemicals to the Lab Pack Room. The chemicals are not considered wastes until they are brought to the Lab Pack Room. The contractor then sorts the wastes into compatible groups, packs them into containers, and packages the containers in vermiculite in 55-gallon drums. The Lab Pack Room is located on the northeast side of the plant and contains a 20-foot by 4-foot counter (See Photo No. 14). The wastes are kept on the counter until the contractor packs them into the drums and transports them off site.
Date of Startup:	This unit was first used in the mid-1980s.
Date of Closure:	This unit is currently active.
Wastes Managed:	This unit manages the unused hazardous chemicals (D001, D002, D003, D005, D008) generated at the facility. A contractor packages these wastes in lab packs and ships them off site for incineration. Attachment C contains a list of the unused hazardous chemicals and the quantities shipped off site in 1989.
Release Controls:	The unit is located indoors and the wastes are stored in containers.
History of Documented Releases:	There are no documented releases from this unit.
Observations:	At the time of the VSI, there was one 5-gallon bucket and one 2-gallon bucket of waste mercury. There was also a 1-gallon container that was approximately one-half full of unknown brown-colored waste. The waste mercury containers were not labeled with the words "hazardous waste." The container of unknown waste was labeled with the words "hazardous waste" and had a start accumulation date of June 3, 1991.

SWMU 9	**Sewer Catch Basins**
Unit Description:	The three Sewer Catch Basins are located between the plant and the boiler room. SWI discharges waste water from the water-wash paint booths to the MWRDGC. The Sewer Catch Basins trap the residual waste paint sludge that is contained the waste water (See Photo No. 15).
Date of Startup:	These units were first used in approximately 1961.
Date of Closure:	These units are currently active.
Wastes Managed:	These units trap any residual waste paint sludge (D001, D007, D008) that is contained within the waste water discharged to the MWRDGC. About every four years, SWI removes the wastes from the Sewer Catch Basins and collects it in a 55-gallon drum. The drum is taken to the Main Hazardous Waste Storage Area (SWMU 7) and shipped off site for disposal as hazardous waste. The facility generates less than 55 gallons of waste from these units every four years.
Release Controls:	There are no specific release controls associated with this unit.
History of Documented Releases:	There are no documented releases from these units.
Observations:	Dynamac did not observe this unit during the VSI because it is located underground.

4.0 AREAS OF CONCERN

Dynamac did not identify any AOCs at the SWI facility during the PA/VSI.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified nine SWMUs and no AOCs at the SWI facility. Background information on the facility's location, operations, waste generating processes, history of documented releases, regulatory history, environmental setting, and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is discussed in Section 3.0. Following are Dynamac's conclusions and recommendations for each SWMU. Table 3 identifies the SWMUs at the SWI facility and suggested further actions.

SWMU 1 **Lab Vent Hood Satellite Accumulation Containers**

Conclusions: The Lab Vent Hood Satellite Accumulation Containers are used to accumulate hazardous wastes generated in the labs. These units consist of 1-gallon metal cans or 1-gallon plastic jugs located within the lab vent hoods inside the plant. The potential for a release via specific environmental media is summarized below.

Ground Water: Low. The wastes are accumulated in 1-gallon containers that are located with in the lab vent hoods inside the plant. The potential for a release to migrate outside the plant is low.

Surface Water: Low. Due to the release controls described in the ground water section above, there is a low potential for a release to surface water.

On-Site Soils: Low. Due to the release controls described in the ground water section above, there is a low potential for a release to on-site soils.

Air: Moderate to High. Although the containers are located within the lab vent hoods, the glass fronts of the hoods were open and the cans and jugs were not kept closed while not being filled. Because this unit manages volatile wastes, there is a moderate potential for a release to the air.

Recommendations: Dynamac recommends that the facility keep the containers closed while not being filled.

TABLE 3
SWMU SUMMARY

Solid Waste Management Unit	Operational Dates	Evidence of Release	Suggested Further Action
1. Lab Vent Hood Satellite Accumulation Containers	1989 to present	None	Close the containers.
2. Paint Booth SAAs	1981 to present	None	None
3. Mill Room SAA	1981 to present	None	None
4. Hazardous Waste Storage Area "A"	1981 to present	None	None
5. Hazardous Waste Storage Area "B"	1990 to present	None	None
6. Former Hazardous Waste Storage Unit	1970 to 1981	None	None
7. Main Hazardous Waste Storage Area	1981 to present	None	Protect from facility traffic.
8. Lab Pack Room	~1985 to present	None	None
9. Sewer Catch Basins	1961 to present	None	None

SWMU 2 **Paint Booth SAAs**

Conclusions: There is a Paint Booth SAA adjacent to each of the three water-wash paint booths inside the plant. These units consist of one 55-gallon drum used for the collection of waste paint sludge (D001, D007, D008), and one 55-gallon drum used for the accumulation of waste mixed solvents, resins, and paints (F001, F002, F003, F005, D001, D035). The drums are kept closed while not being filled. The potential for a release via specific environmental media is summarized below.

Ground Water: Low. The drums are located inside the plant and kept closed while not being filled. There are no floor drains inside the plant. The potential for a spill to migrate outside the plant is low.

Surface Water: Low. Due to the release controls described in the ground water section above, the potential for a release to surface water is low.

On-Site Soils: Low. Due to the release controls described in the ground water section above, the potential for a release to on-site soils is low.

Air: Low. Although the unit manages volatile wastes, the drums are kept closed while not being filled.

Recommendation: No further actions are recommended at this time.

SWMU 3 **Mill Room SAA**

Conclusions: The unit consists of an area containing three 55-gallon drums; one drum is used for the collection of waste latex water (nonhazardous) and two drums are used for the collection of waste mixed solvents, resins, and paints. The potential for a release via specific environmental media is summarized below.

Ground Water: Low. The drums are located inside the plant and kept closed while not being filled. There are no floor drains in the Mill Room. The potential for a spill to migrate outside the building is low.

Surface Water: Low. Due to the release controls described in the ground water section above, the potential for a release to surface water is low.

On-Site Soils: Low. Due to the release controls described in the ground water section above, the potential for a release to on-site soils is low.

Air: Low. Although the unit manages wastes of high volatility, the drums are kept closed while not being filled.

Recommendations: No further actions are recommended at this time.

SWMU 4 **Hazardous Waste Storage Area "A"**

Conclusions: This unit manages hazardous wastes generated in the polymer labs. The wastes are stored outside the plant in 55-gallon drums that are located on top of a spill container. The potential for a release via specific environmental media is summarized below.

Ground Water: Low. The wastes are contained in closed 55-gallon steel drums that are located on top of a spill container to collect any spills that may occur.

Surface Water: Low. Surface water runoff at the facility is south towards storm sewers located in the parking lot. The storm sewers discharge to the MWRDGC for treatment prior to discharge to the Chicago River or the Little Calumet River. The nearest surface water body, Lake Calumet, is located approximately three-quarters of a mile east of the facility.

On-Site Soils: Low. Due to the release controls described in the ground water section above, there is a low potential for a release to on-site soils.

Air: Low. The unit is located outdoors and the drums are kept closed while not being filled.

Recommendations: No further actions are recommended at this time.

SWMU 5 **Hazardous Waste Storage Area "B"**

Conclusions: This unit manages hazardous wastes generated in the analytical labs. The wastes are stored outdoors in 55-gallon drums that are located on top of a spill container. The potential for a release via specific environmental media is summarized below.

Ground Water: Low. The wastes are contained in closed 55-gallon steel drums that are located on top of a spill container to collect any spills that may occur.

Surface Water: Low. Surface water runoff at the facility is south towards storm sewers located in the parking lot. The storm sewers discharge to the MWRDGC for treatment prior to discharge to the Chicago River or the Little Calumet River. The nearest surface water body, Lake Calumet, is located approximately three-quarters of a mile east of the facility.

On-Site Soils: Low. Due to the release controls described in the ground water section above, there is a low potential for a release to on-site soils.

Air: Low. The unit is located outdoors and the drums are kept closed while not being filled.

Recommendations: No further actions are recommended at this time.

SWMU 6 **Former Hazardous Waste Storage Unit**

Conclusions: The Former Hazardous Waste Storage Unit was located outside the northeast corner of the plant (See Figure 2). The unit consisted of a 5,000-gallon portable steel tanker and a drummed waste storage area. The unit was used to store the majority of the hazardous wastes generated at the facility prior to 1981.

The potential for a past release to have impacted ground water, on-site soils, and air quality is low. Although the unit was located outdoors on a grassy area without a concrete pad and managed volatile wastes, there was no evidence of a past release and there is no documentation of a release associated with the unit. The potential for a past release to have impacted surface water is low because surface water runoff is collected by storm sewers which discharge to the MWRDGC for treatment.

The potential for a future release to ground water, surface water, on-site soils, and air is low because SWI removed the tanker and drums in 1981.

Recommendations: No further actions are recommended at this time.

SWMU 7 **Main Hazardous Waste Storage Area**

Conclusions: The Main Hazardous Waste Storage Area is used to collect the drummed hazardous waste generated at the facility. The drums are located on a gravel pad between the boiler room and a parking area. The potential for a release via specific environmental media is summarized below.

Ground Water: Moderate. The unit is located on a gravel pad between the boiler room and a parking area. The drums are not protected from being knocked over by vehicles in the parking area (See Photo No. 13). Ground water is encountered at approximately 10 feet below ground surface (Cravens and Zahn, 1990), but surficial soils are clayey and reduce the potential of downward migration of contaminants. If a spill were to occur, there is a potential for a release to ground water.

Surface Water: Low. Although the drums in this unit are not protected from being knocked over by vehicles in the parking area, there is a low potential for a release to surface water. Surface water drainage at the facility is towards the south, where it is collected by storm sewers that discharge to the MWRDGC.

On-Site Soils: Moderate. The unit is located on a gravel pad between the boiler room and a parking area. The drums are not protected from being knocked over by vehicles in the parking area. If a spill were to occur, there is a potential for a release to on-site soils.

Air: Moderate. The unit is located on a gravel pad between the boiler room and a parking area. The drums are not protected from being knocked over by vehicles in the parking area. If a spill were to occur, there is a potential for a release to the air.

Recommendations: Dynamac recommends that the facility construct a device, such as a guard rail, to protect the drums from the vehicles in the adjacent parking area.

SWMU 8 **Lab Pack Room**

Conclusions: SWI uses a variety of hazardous chemicals in the development and testing of their products. After they have selected a contractor to package and remove the waste, SWI brings all of the unused hazardous chemicals that have expired to the lab pack room. The chemicals are not considered wastes until they are brought to the Lab Pack Room. The contractor then sorts the wastes into compatible groups, packs them into containers, and packages the containers in vermiculite in 55-gallon drums. The Lab Pack Room is located on the northeast side of the plant and contains a 20-foot by 4-foot counter (See Photo No. 14). The wastes are kept on the counter until the contractor packs them into the drums and transports them off site as hazardous wastes. At the time of the VSI, Dynamac observed approximately 7 gallons of waste mercury and one-half-gallon of an unidentified brown-colored waste that the contractor left at the facility after the last shipment in the summer of 1991. The potential for a release via specific environmental media is summarized below.

Ground Water: Low. The unit is located inside the plant and manages small quantities of unused chemicals hazardous waste in containers. The potential for a release to migrate outside the building is low.

Surface Water: Low. Due to the release controls described in the ground water section above, there is a low potential for a release to surface water.

On-Site Soils: Low. Due to the release controls described in the ground water section above, there is a low potential for a release to on-site soils.

Air: Low. Although the unit manages some wastes of high volatility, the wastes are contained within closed containers.

Recommendations: No further actions are recommended at this time.

SWMU 9 **Sewer Catch Basins**

Conclusions: SWI discharges waste water from the water-wash paint booths to the MWRDGC via the Sewer Catch Basins (See Photo No. 15). These units trap any residual waste paint sludge (D001, D007, D008) that is contained within the waste water that is discharged to the MWRDGC. About every four years, SWI removes the wastes from the Sewer Catch Basins and collects it in a 55-gallon drum. The facility generates less

than 55 gallons of waste from this unit every four years. The potential for a release via specific environmental media is summarized below.

Ground Water: Low. This unit is part of a system that discharges waste water to the MWRDGC. The catch basins collect a very small amount of residual waste paint sludge contained within the waste water. There is a low potential for contaminants to migrate from this unit.

Surface Water: Low. For the reasons described in the ground water section above, there is a low potential for a release to surface water.

On-Site Soils: Low. For the reasons described in the ground water section above, there is a low potential for a release to on-site soils.

Air: Low. Although the waste water contains a small quantity of waste paint sludge (D001, D007, D008), which contains volatile constituents, it is likely the constituents have volatilized by the time they are collected by this unit.

Recommendations: No further actions are recommended at this time.

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ATTACHMENT A

VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

VISUAL SITE INSPECTION SUMMARY

Sherwin Williams Incorporated
Chicago, Illinois 60628
ILD 000 672 451

Date:	January 28, 1992
Facility Representatives:	A.J. (Sam) Blais, Manager of Facilities & Operations
	Clarence Roberts, Mill Room Supervisor
Inspection Team:	Joseph Weslock, Dynamac Corporation Valerie Farrell, Dynamac Corporation
Photographer:	Joseph Weslock, Dynamac Corporation
Weather Conditions:	Overcast, temperature about 30° F
Summary of Activities:	The visual site inspection (VSI) began at 8:15 a.m. with an introductory meeting. The inspection team discussed the purpose of the VSI and the agenda for the visit. Facility representatives then discussed the facility's past and current operations, solid wastes generated, and documented release history. Most of the information was exchanged on a question-and-answer basis. SWI representatives provided the inspection team with copies of documents requested.
	The VSI tour began at 11:10 a.m.. Mr. Blais and Mr. Roberts discussed specific operations at each area as we walked through the production areas. The tour began outside the south side of the plant at the Main Hazardous Waste Storage Area (SWMU 7) and Hazardous Waste Storage Area "B" (SWMU 5). We then walked through the Resin Pilot Plant and exited at the north side to observe Hazardous Waste Storage Area "A" (SWMU 4) and the Sewer Catch Basins (SWMU 9).

Mr. Blais then led us back inside the plant to the analytical labs, where we observed several Lab Vent Hood Satellite Accumulation Containers (SWMU 1). We then observed the Mill Room SAA (SWMU 3) and the polymer labs. There were also several Lab Vent Hood Satellite Accumulation Containers (SWMU 1) in the polymer labs. We then proceeded to the Lab Pack Room (SWMU 8) and exited the plant to observe the Former Hazardous Waste Storage Unit (SWMU 6). We then entered the plant near the coatings area and observed the three water-wash paint booths and the Paint Booth SAAs (SWMU 2).

The tour concluded at 12:50 p.m., after which the inspection team held an exit meeting with Mr. Blais and Mr. Roberts. The VSI was completed and the inspection team left the facility at 1:30 p.m.

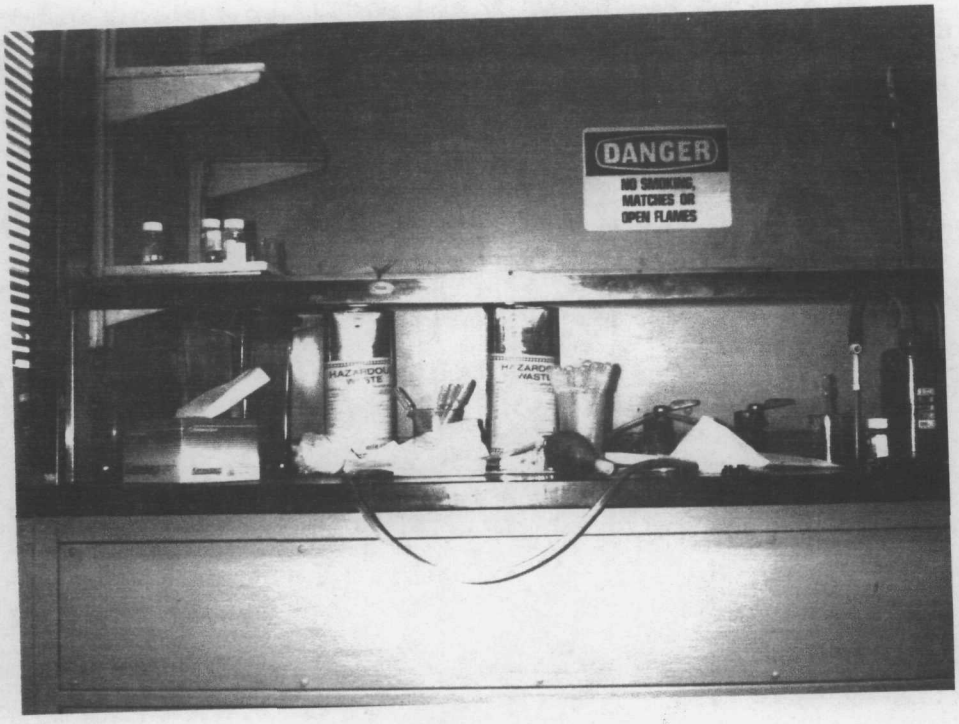


Photo No.: 1 **Location:** SWMU 1
Orientation: South **Date:** January 28, 1992
Description: Two Lab Vent Hood Satellite Accumulation Containers located in the analytical lab. One is labeled aqueous and the other is labeled solvent.

Photo No.: 2 **Location:** SWMU 1
Orientation: West **Date:** January 28, 1992
Description: Lab Vent Hood Satellite Accumulation Containers located in the polymer lab. Both of the containers are open.

Photo No.: 3 **Location:** SWMU 1
Orientation: North **Date:** January 28, 1992
Description: Five Lab Vent Hood Satellite Accumulation Containers located in the polymer lab.

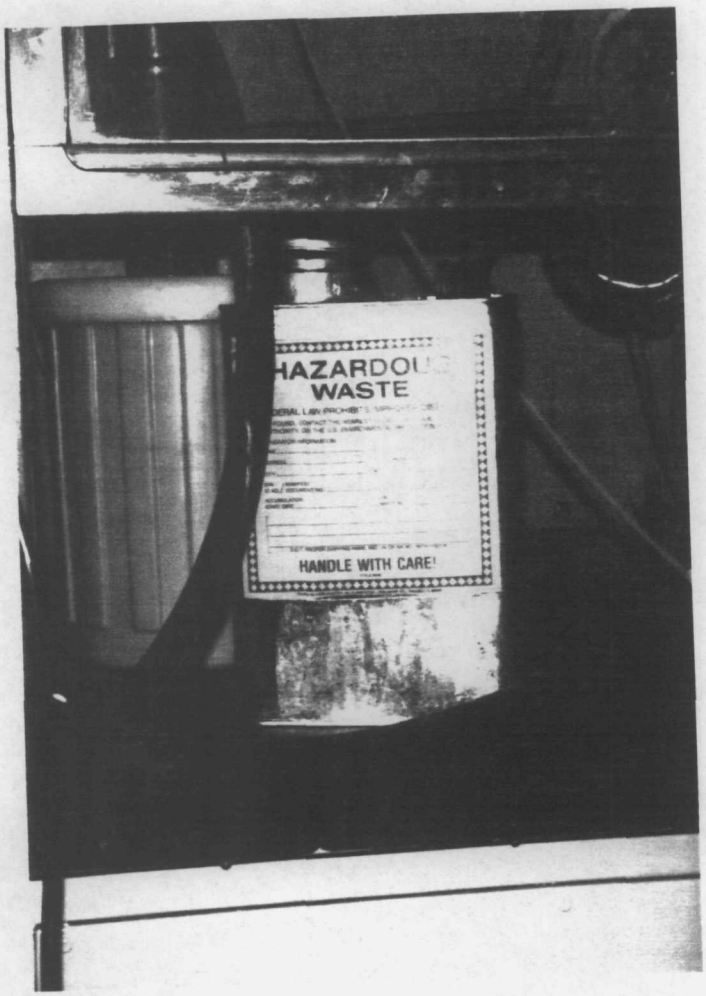


Photo No. : 4
Location : SWMU 1
Orientation : North
Date : January 28, 1992
Description : One Lab Vent Hood Satellite Accumulation Container located in the coatings lab.

Photo No. : 5
Location : SWMU 2
Orientation : Southeast
Date : January 28, 1992
Description : One 55-gallon drum of waste mixed solvents, resins, and paints in a Paint Booth Satellite Accumulation Area.

Photo No.: 6 Location: SWMU 2
Orientation: South Date: January 28, 1992
Description: Two 55-gallon drums in a Paint Booth Satellite Accumulation Area. One drums contains waste mixed solvents, resins, and paints and the other contains waste paint sludge.

Photo No. : 7
Location : SWMU 2
Orientation : North
Date : January 28, 1992
Description : One 55-gallon drum containing waste mixed solvents, resins, and paints in a Paint Booth Satellite Accumulation Area.

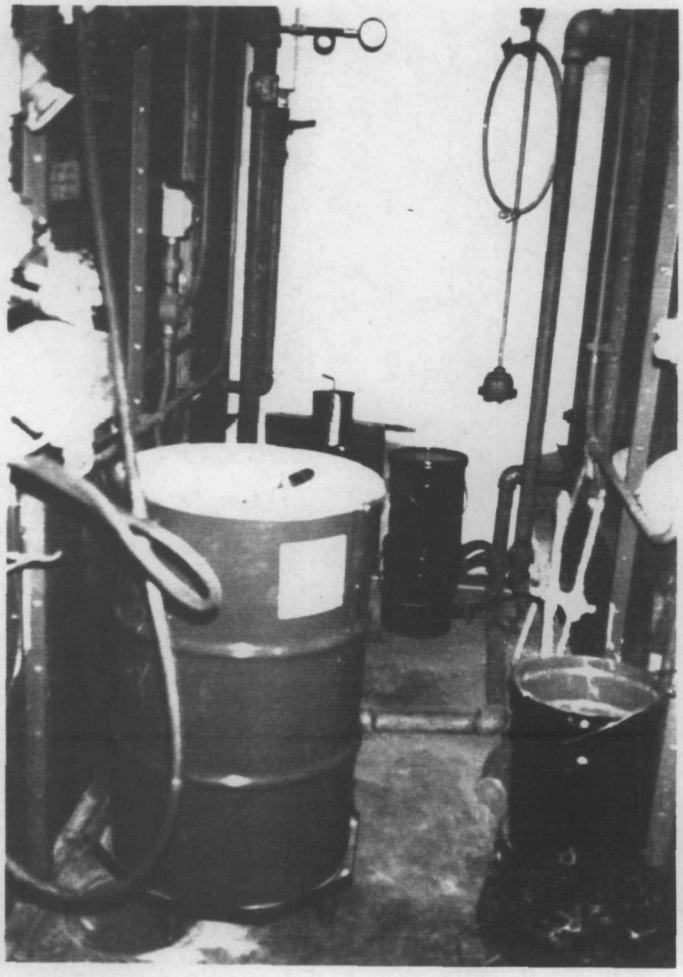


Photo No. : 8
Location : SWMU 2
Orientation : North
Date : January 28, 1992
Description : One 55-gallon drum of waste paint sludge in a Paint Booth Satellite Accumulation Area.

Photo No. : 9
Location : SWMU 3
Orientation : West
Date : January 28, 1992
Description : Mill Room Satellite Accumulation Area containing two 55-gallon drums of waste mixed solvents, resins, and paints and one 55-gallon drum of nonhazardous waste latex paint water.

Photo No.: 10 Location: SWMU 4
Orientation: East Date: January 28, 1992
Description: Six 55-gallon drums of hazardous waste located in Hazardous Waste Storage Area "A."

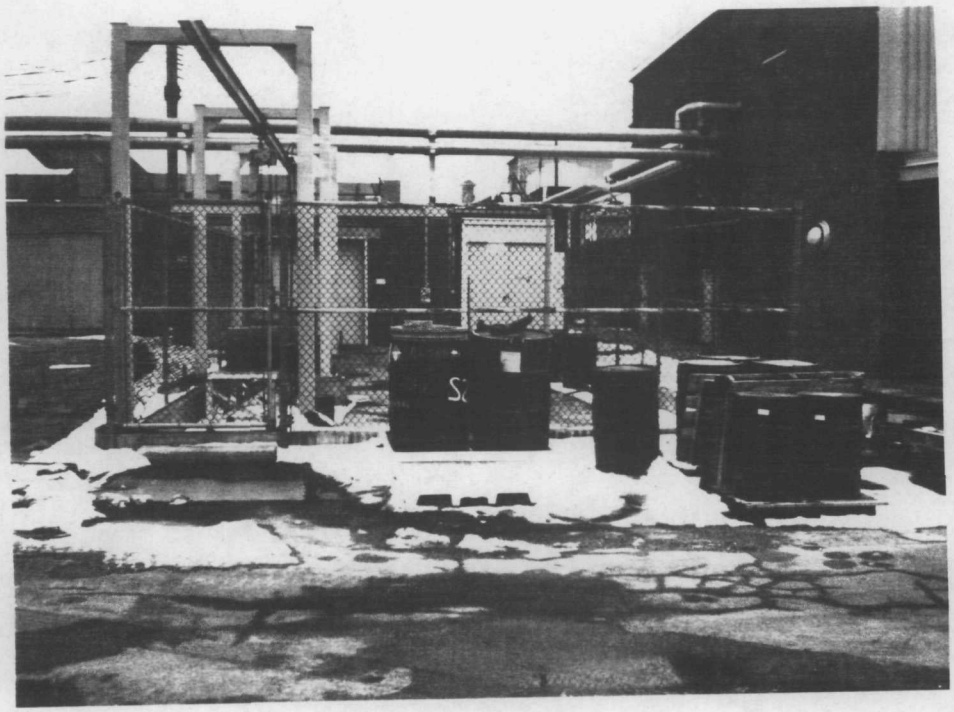


Photo No.: 11 **Location:** SWMU 5
Orientation: North **Date:** January 28, 1992
Description: Four 55-gallon drums and one 60-gallon plastic container of hazardous waste located in Hazardous Waste Storage Area "B."

Photo No.: 12 **Location:** SWMU 6
Orientation: Northeast **Date:** January 28, 1992
Description: Location of Former Hazardous Waste Storage Unit.

Photo No.: 13 **Location: SWMU 7**
Orientation: North **Date: January 28, 1992**
Description: Seven 55-gallon drums of hazardous waste located in the Main Hazardous Waste Storage Area.

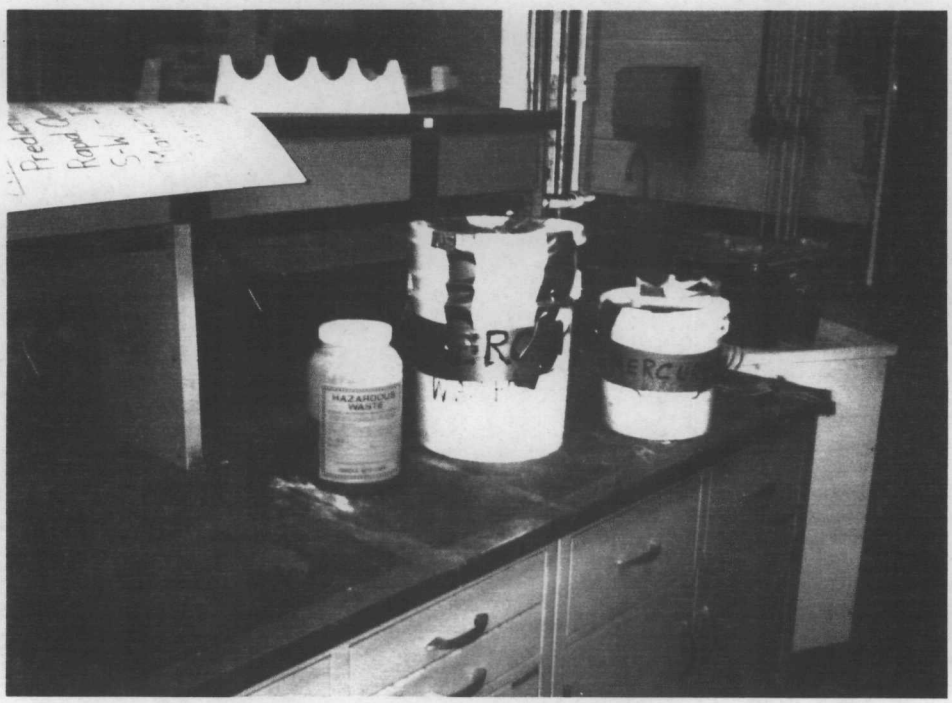


Photo No.: 14 **Location: SWMU 8**
Orientation: North **Date: January 28, 1992**
Description: Approximately seven gallons of mercury-containing waste and approximately one-half gallon of unknown waste located in the Lab Pack Room.

Photo No.: 15
Orientation: West
Description: Location of one of the Sewer Catch Basins.

Location: SWMU 9
Date: January 28, 1992

END OF PHOTOGRAPHS

ATTACHMENT B

VISUAL SITE INSPECTION
FIELD NOTES

Sherwin Williams. January 28, 1992
8:15 A ~ weather overcast 30°-35°
- arrive at facility and met with Sam Blaze and Clarence Roberts.
- 8:20: Dynamac Representatives, Joseph Weslock and Valerie Farrell

① - solvents, resins, paints - Fuel blend
- Heritage in Lemont

② - mixed monomers

③ - organic bases

④ - acids

⑤ - latex, sludge, water, spray booths

⑥ - chlorinated solvents

⑦ - lab packs
- hazardous materials
- keep them separate - may react.
- send out 1 x per year
~ 500 - 1000 lbs

- Original bld was built in 1939

- Pulman standard owned this
  - was engineering bld
  - offices,
  - made rail road cars
  - Navy contract

- Purchased by S.W. in 1960
  - renovated - and used in '61
- was R & d
- now called automotive tech. center.

1961 — bldg = 70,000 - sq. feet.
1974 — pilot plant - 2,500 - sq. ft
1963 — solvent storage - 500 - sq. Ft.

(receiving room / boiler room)

- addition in 1967 - (U-shape)
- addition in 1971 - (back)

- Property boundry - 8.3 ACRES.
  109th to 108 (Illinois Commuter)
- W - Cottage Grove - Metro Railroad tracks
  E - Champlain ~approx (Weiss Steel) Vacant (Ashland products)
  N - 108th (housing)
  S - ~109. Place. - owned by State of Ill.
  used to be Perlow steel
  - Sof 111 - Pullman historic area : residential

Wells- none on site

→ one outfall to City Sewer
(Greater Us Sanitary dist)
- do sampling 1x per year
- Bod, suspended solid
- previously for heavy metals but stopped this year.

97
- number of employees - ~~~90-95~~
- ~123 -(about 15 non-tech)

- Security
- entire fence - access as S. W corner
- cottage grove steel fence
- rest Chain-link
- microwave security system to cover bldg.
- ADT security 24 hrs per day

- entire facility covered by sprinkler system

Bldg- ~one story except~
- small metal bldgs to handle air

- basement to hold compressing unit for cooling system.

JS

Bldg cont'd.
- old fire station @ N.E corner of ~~bldg~~ facility.
- cleaned, empty, etc.

Processes:

- Basically Laboratory R-D work.
- Auto tech center
- support auto paint (refinish business)
- not paint for new cars except interior paints
- they develop a lot of different auto coatings, cost reductions, compliants, various, problems

- Labs - S.W. portion of bldg. : room 20.

- polymer research - 20-37

- Coatings - 123-137

Paints
- polymer to start.
- then coatings - add pigments, dryers, solvents and ~~or~~ test for gloss and flexibility.
- sent out to "exposure" in arizona - pebbles, sun, etc.
- then to main office in Cleveland
- if like the product then make larger volume in pilot plant.

- do testing on (12 x 6) or (3 x 6)
- steel, aluminum, plastics

Mill room - small mixing lab to mix pigments, colors etc.

- Spray booths - 53, 124, 112
- water-wash
- 350-500-gallon spray booths
- every day add chemical to booth to cause paints/pigments float
- have separate drum for ☆

each booth.
- fill one drum /per month.

- have one drum for solvent paint

- have one drum for waste pigment. (hazardous)
- (D001) pigments contain Chrome (D008) (D007) (also peel paint).

- when drum is filled at booth - close it, date it, labels it, and take it to OWSA. South end of facility. → Great Lakes Environmental transport takes it to incinerator @ ~~Petro Chem Process~~ or Chem Met Service - in Wyandot, Mi

9:10

- quantity - 550-gallons per yr.

- Water is change ~ 6-8 wks.
- Water goes to GCSD
- have 3 small catch basin to remove solids
- Clean catch basins every 4-5 yrs. (did it in 89-90)
- all 3 = One 55-gall drum (Chrome lead 2007, 0008)

S.A.A -

9'25 have one drum where (at each spray booth) the excess paint and waste solvents are accumulated.
~~- and peel paint (strippable coatings)~~

→ will have new centr. fuge paint booth in 1992

- quantity generated: 5,692-gal in 1989
- 6,279-gal in 1996

Constituents:
D001, F001, F002, F003, F005
- arsenic - lead
- cadmium - etc.
- chromium
- cyanide

* Major solvents used:

*- MIBK, MEK, MIK
- ACETONE
*- xylene
- toluene
- naptha
- alcohols

(#1) when S.A.A is full it is ~~labeled~~, taken to DWSA and dated
- it is labeled in SAA.

Polymer ~~lab~~ lab-
- have monomer waste
- from: bad batches
old material
- have 4 different ~~S.A~~ drums in SAA located south of plant. (polymer S.A.A.)

(A)
① solvents - same
② mixed monomers
③ organic bases
④ polymers → included in solvent : resin total.

- bring out to S.A.A in small container.
- Polymer SAA handles wastes from Polymer area ; Pilot plant.

(#2)
mixed monomers: (A)
D001, D008
- 1,430 - gallons in 1990.

— ACID DRUM - (B)
- located way south by pilot plant.

- from analytical area
- so acedic acid.
- maybe one drum per yr.

— Organic Bases (B)
- 165 gallons per year.
- D001, D002
- to Petro Chem of (LWD in Kentucky) post in Detroit Mi

— Chlorinated Solvents (B)
- combo of solvents w/ some chlorinates with them
- this is incinerated
- generated in polymer group and analytical group.
- ∠ 55-gall / yr.
- to Chem Met in Wyandot.
- F-listed solvents + (D001)

OFF-SPEC - old, materials taken to DWSA.
- Shipped ?

⑦ Lab Packs
- acutely hazardous materials
- secondary containment
- group them w/ compatible wastes but not actually mixed.
- some constant some change regularly.
- Constants - hard to typify.
  - peroxides
  - ~~iso~~ isocyanites
  -

1989 Lab packing done by great Lakes

- S.W. makes list of Lab Pack items and sends it out for proposal
- Company comes in and separates, drums, packs etc.

- take it to 151 and transports off-site.
- mostly incinerated.

Pilot Plant does same thing as Polymer plant on a large scale
- mixing in general
- use S.A.A (A).

→ Little parts washers drummed w other solvens

mill room - 3
- 5 around - plant.

Regulatory History:

Notification 8-14-80
61→ Part A: 11 - 80
Dec 80 (SO2) 5,000 gallon - Steel
mixed all compatible wastes in here.
- lots of resins.
- one area for all of wastes
- except lab packs were separate.
- quantities changed b/c focus of paints changed

- AFFEE 1980
  - filed as protective filer
  - never did not accumulate ~~after~~ < 90 days right after
  - and requested withdrawal of Part A. in approx '81. to U.S. EPA.
  - no recollection of response from U.S. EPA as generator only
  - Right after filed stopped using tank & storage area
    - removed tanker
    - removed drums
    - no closure plan
    - no implementation
    - no activites
  - operated as a generator only

USTs.

active
#2
10,000-gallon- fuel oil (steel)
- installed prior to 1960
- no inventory loss
- no update or secondary contain.

5,000-gallon fuel oil tank
- installed '67
- removed in ~~early~~ early-80's
- was found in tact.
- covered w/ concrete pad.
- no oversight
- backhoe → crane → truck
- emptied & prior to removal- was in tact.

Air
* Now has air permit to cover boilers & tank.

Air
may soon be required to permit spray booths

U.S.

- NPDES - none

- water discharge to GCSD.
  - not exempt b/c great quantity.
  - 1.5 mill gallons / yr.

SUPERFUND
- none known

* ONE-TIME WASTE - 91-92
  - asbestos removal
  - piping insulation :
  - removed asbestos in "new" area (room 50)
  - contractor took care of everything.
  - also removed from air handling unit (30-cubic-yards)

~100 lbs taken back by contractor

- sent to landfill

* PCB's - 7 transformers)
  - drained : refilled a few yrs. ago (89-90)
  - G.E : westinghouse tested.
  - PCB's range 50-100 ppm.

Remediation on-site:
NONE.

Release:
NONE.

Complaints:
NONE.

11:00 A.m. Facility Inspection.

DWSA - On gravel - near bldg.

12-7-91 ① waste Flam. monomer
12-18-91 ① ① paint sludge latex water.
12-9-91 ①
12-16-91 ①
12-30-91 ①
12-6-91 ① waste mixed monomer

① Waste acid - non-dated, (D002)

S.A.A (B)

① Waste solvents - F002, F001, F003, F005. D001

① Waste Paint Resin ; Solvent
F001, F002, F003, F005
D035

① Paint Sludge | Latex water
D001, D007, D008

① Mix Monomer - D001, D008

- on rack "Spill container"

- product storage adjacent

- Pilot Bldg -
Floor drains go to Catch Basin.

SAA (A)

① ① Waste Solvent (F001, F002, F003, F005)

① Waste monomer (D001, D008)

① Organic base (D001, D002)

① Waste Paint (D001)

① Paint Sludge latex Water (D001, D007, D008)

Blaze "Total ~~SAA~~ - 6 in analytical"

① Lab - analytical
SAA →
one aqueous
one solvent - open container

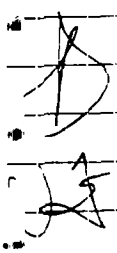
Label = Haz waste - no date
no code.

② Lab - analytical
photo #7 - waste solvents under each hood.
- open.
- labeled haz waste
- no date.

photo 8 — ① jug Pyradine
① jug organic base
③ solvent / paint - unlabeled

Mill Room

① ① Waste Solvent FOO1, FOO2, FOO3, FOO5



room Polymer Lab

(21)-22 ⊘ SAA (1-gal) - haz waste label - not whats in it or date.

(2) (D) 1-gal - same as above

23 (D)(D) S.A.A. - same as above

= ~ Blaze - 10-12 S.A.A. (1-gal) total

Lab Packing Area

- where hazardous waste is stored untill Contractor comes and packs up acutely haz. waste.

- gener. 500-1000 gal per yr.

Observations

- approx 7-gallons of mercury not labeled
- ~1/2 gallon of ?

(#1) Spray Booth Room (124)

① Sludge Water latex D001, D007, D008

① Waste Paint Solvent (D001, F001, F003, F005 F002)

#2 Spray Booth room (112)

① Paint sludge latex D001, D007 D008

① Waste Paint Solvent

Coatings rooms - 6 vents

-one 1-gal can

#3 Spray Booth
- paint sludge
- Waste Paint Solvent

[redacted]

12:50 Wrap up meeting

<First use>

DWSA - used first 1981

Satellite (B) - used 1990
prior used DWSA for these wastes

Satellite (A) - 1981

Mill Room Accum drum - 1981

Spray Booth S.A.A. 1981
(except new one)

Spray Booth (new; 124) 1988

1-gal can in hoods - 1989

Catch basins - 1960 - 1961

Old Storage ~1970 - 1981

Lab Packs - ~~1989~~ mid-80's - 1990
- prior to 151 used to collect them in Mill Room

1:10 pm Nearest School
- 106th & Cottage - "Poe"
- 111th and M.L.King Drive
- "St. Martin De Porres"

1:30 Leave Facility
- Thank representatives
- copies received.

ATTACHMENT C

LIST OF THE UNUSED HAZARDOUS CHEMICALS DISPOSED OF IN LAB PACKS IN 1989

Waste	Weight/Quantity
1,3 Diaminopropane	1 pound(s)
Epichlorohyndryn	2 pound(s)
Epon Curing Agent H-1 (contains Diethylene triamine)	1 pound(s)
Sodium Methoxide	.5 pound(s)
Nyacol Ago-40 (contains antimony pentoxide)	3 pound(s)
1,4-bis(aminopropyl) piperazine	1 pound(s)
Benzyl trimethyl ammonium hydroxide	4 ounce(s)
4,9-Dioxadodecane-1,12-Diamine	1 pound(s)
Trimethylamine hydrochloride	4 ounce(s)
Benzylamine	4 ounce(s)
N-(iso-Butoxymethyl) Acrylamide	3 ounce(s)
1,8-Diazabicyclo(5.4.0)undec-7-ene	4 ounce(s)
1,1,1,3,3,3-hexamethyldisilazane	4 ounce(s)
Triethylene diamine	.25 pound(s)
Ethylenediamine tetra-acetic acid	4 ounce(s)
Aero Dicyandiamide	.25 pound(s)
Triacetone-diamine	1 pound(s)
Potassuim Cyanide	.5 pound(s)
Mercuric Cyanide	.25 pound(s)
Triphenylphosphine sulfide	1 ounce(s)

Waste	Weight/Quantity
Sodium Borohydride	300 gram(s)
Phosphorus tribromide	100 gram(s)
Tin (IV) Chloride, ahydrous	250 gram(s)
Titanium (IV) Chloride	600 gram(s)
Benzoyl Chloride	250 mL(s)
Boron Trifluoride Phenolate	250 gram(s)
Barium Oxide	500 gram(s)
Bromine	500 gram(s)
Ethyl Magnesium Bromide solution	100 mL(s)
Mercury Debris	10 gallon(s)
2,ChloroBenzoic Acid	100 gram(s)
Lithium Acetate, Dihydrate	100 gram(s)
Salicylic Acid	100 gram(s)
Thiosalicylic Acid	100 gram(s)
L-Ascorbic Acid	100 gram(s)
Phenyl Phosphinic Acid	250 gram(s)
Phenyl Phosphonic Acid	250 gram(s)
5-Sulfosalicylic Acide, Dihydrate	100 gram(s)
1-Napthalene Sulfonic Acid	100 gram(s)
Tannic Acid	100 gram(s)
2,4-Dichloro Benzoic Acid	100 gram(s)

Waste	Weight/Quantity
P-Toluene Sulfonic Acid	100 gram(s)
Titanium Potassium Oxalate	100 gram(s)
Erythorbic Acid, (Iso ascorbic acid)	250 gram(s)
Glyoxylic Acid, Mon hydrate	100 gram(s)
D-Riboni Acid	25 gram(s)
Crotonic Acid	3 Kg
Salicylic Acid	3 Kg
Polyamic Acid	3 Kg
Citric Acid	1.5 Kg
2,4,Hexadienoic Acid	1.5 Kg
Silinic Acid	.5 Kg
Sulfamic Acid	1 Kg
ThioDiglylolic Acid	.5 Kg
Maleic Acid	.5 Kg
Oxalic Acid	.5 Kg
2,2 Bis (Hydroxy methyl) Propiovic Acid	.5 Kg
2,Acyryamino glycolic Acid	.25 Kg
Nitrilo Acetic Acid	1 Kg
Hydroxylamine Hydrochloride	600 gram(s)
Nitrobenzoic Acid	200 gram(s)
Di Methyl Malonic Acid	25 gram(s)

Waste	Weight/Quantity
D-Ribonic Acid	25 gram(s)
Benzyl Phosphonic Acid	5 gram(s)
5-Hydantoin Acetic Acid	5 gram(s)
2-Ketoglutaric Acid	30 gram(s)
4-Ketopimelic Acid	5 gram(s)
3-Cloropivalic Acid	5 gram(s)
Tetrachlorophthalic anhydride	8 pound(s)
Toluene sulfonyl chloride	1 pound(s)
Isatoic anhydride	4 pound(s)
2,2-Bipyridyl	.5 pound(s)
Ascorbyl Palmitate	1 pound(s)
Cellulose Acetate Butyrate	.25 pound(s)
2,2-Bis(Hydroxymethyl)-2,2',2"-Nitrilotriethanol	.25 pound(s)
Polyacrylamide	.5 pound(s)
(Carbethoxyethylidene)-Triphenyl-phosphorane	1 ounce(s)
Methyltriphenylphosphonium iodide	1 ounce(s)
Tetra methyl ammonium iodide	1 ounce(s)
Trimethyl-1,2,4-benzene tricarboxylate	4 ounce(s)
Di-n-butylammonium Tetrafluoroborate	4 ounce(s)
Phenolphalein	.25 pound(s)
Sebacyl Chloride	4 ounce(s)

Waste	Weight/Quantity
Urea	2 pound(s)
Catechol	.25 pound(s)
Benzophenone	4 ounce(s)
Paraformaldehyde	4 ounce(s)
Pyrogallol	.75 pound(s)
1,1-(Methylene di-4,1-phenylene)-bismalemide	4 ounce(s)
Benzhydrol	4 ounce(s)
Lithium Thiocyanate	2 ounce(s)
Resorcinal Monobenzoate	.25 pound(s)
(2-Hydroxybenzyl) triphenylphosphonium bromide	1 ounce(s)
Tetrabytyl phosphonium bromide	1 ounce(s)
Tetraethylammonium bromide	.25 pound(s)
Zinc Dibutyl oxide	.25 pound(s)
4,4-Sulfonyl Diphenol	4 pound(s)
3-Nitrophthalic anhydride	1 ounce(s)
Trimethylsulfoxonium iodide	1 ounce(s)
Trimethylsulfonium iodide	1 ounce(s)
Phenyl sulfoxide	1 ounce(s)
Dibenzo-18-crown-6	1 ounce(s)
Zinc-acetylacetonate	1 pound(s)
Tetramethylthiuram Disulfide	.5 pound(s)

Waste	Weight/Quantity
3-Nitrophthalic anhydride	4 ounce(s)
P-Methoxyphenol	4 ounce(s)
Di-N-butylammonium tetrafloroborate	.25 pound(s)
Zinc dimethyl dithiocarbamate	.25 pound(s)
Phenyl Phosphate	4 ounce(s)
4,4,4-trifluoro-1-(3-pyridyl)-1,3-butanedione	1 ounce(s)
Tri-butyltin Fluoride	4 ounce(s)
2,4-Dihydroxyacetophenone	4 ounce(s)
Ethylene Oxide	400 mL(s)
Propylene Carbonate	1 gallon(s)
37% Formaldehyde Solution in MeOH	1 gallon(s)
Rohm and Haas Acrylic Resin	1 gallon(s)
Bromo Trichloromethane	500 mL(s)
CIBA-Geigy Epoxy Resin	1 liter(s)
DiButyltin DiLaurate	1 Pint(s)
Naptha/Butylacetate	1 liter(s)
Furfuryl Alcohol	1 liter(s)
Salicylaldehyde	1 liter(s)
2-Furaldehyde	1 liter(s)
2,2-DiMethoxy Propane	1 liter(s)
Isoamyl DiHydrogen Phosphate	1 liter(s)

Waste	Weight/Quantity
Tributyltin Methacrylate	4 liter(s)
2-Ethyl Hexyl Azelate	1 liter(s)
1-Nitro propane	500 mL(s)
Tetraethyl Orthosilicate	500 mL(s)
DiButyltin DiAcetate	500 mL(s)
Thiodiglycol	250 mL(s)
Zonyl-TA-M (surfactant)	300 mL(s)
N,N-Dimethyl Formamide	250 mL(s)
Undecanone	250 mL(s)
Tetrabutyl Orthotitanate	250 mL(s)
Tetra isopropyl ortho-titinate	250 mL(s)
Bioban N-95	2 pint(s)
Tributyl Zinc Methacralate	.5 pint(s)
DuPont Tyzor (organic titanate)	100 mL(s)
1,1,3,3-Tetramethyl Di Sidoxane	200 mL(s)
1,1,2,2-Tetrachloroethane	250 mL(s)
2,6-Lutidine	100 mL(s)
Triethoxyvinyl Silane	100 mL(s)
Allyl Bromide	100 mL(s)
Hydroxy Aceto Phenone	100 mL(s)
Hexafluoro Isopropanol	100 mL(s)

Waste	Weight/Quantity
Tetra Fluoro-1-Propanol	100 mL(s)
2,3- ButaneDione	100 mL(s)
Cerium Octoate	100 mL(s)
Brij 30	100 mL(s)
2-Phenylthio Cthanol	5 mL(s)
N,N-Dimethyl-M-toluidine	100 mL(s)
DiButyl Tin Dilaurate	100 mL(s)
Organometallic Paint Catalyst	100 mL(s)
Glycolyluvea	6 pound(s)
Hexabromobenzene	.5 pound(s)
Hydroxycyclohexyltosylate-phenyl isocyanate	.5 pound(s)
B-Alanine	.5 pound(s)
Acrylamide Copolymer	4 ounce(s)
Potassium Acid Phthalate	.25 pound(s)
Polyoxyethylene ether	4 ounce(s)
2-Hydroxybenzyl Alcohol	4 ounce(s)
2-imidazolidinethione	4 ounce(s)
4,4-sulfonyldiphenol	4 ounce(s)
Glucoheptono-1,4-lactone	2 ounce(s)
Terephthaldicarboxaldehyde	4 ounce(s)
Carboxylic Acid	10 pound(s)

Waste	Weight/Quantity
Tripentaerythritol	2 pound(s)
Hydrocarbon Solid	2 pound(s)
Alkyl titanate	1 pound(s)
Dicyandiamide	1 pound(s)
Imidazule Tosylate	3 ounce(s)
2-2-Dihydroxybenzophenone	1 ounce(s)
1-triphenylphosphoranylidene-2-propanone	1 ounce(s)
Bis (cyclopentadienyl) zirconium dichloride	1 ounce(s)
Ribonic acid y-lactone	1 ounce(s)
Tetramethyl ammonium hexafluorophosphate	1 ounce(s)
4-Allylthiosemicarbazide	1 ounce(s)
Imidazole	.5 pound(s)
Lithium Acetate	.5 pound(s)
Organometallic (tin) paint catalyst	.5 pound(s)
Rexyn 300 (neutral ion exchange resin)	1 pound(s)
Tetramethyl ammonium chloride	4 ounce(s)
Resorcinol	1 pound(s)
1-(p-toluenesulfonyl)-imidazol	1 ounce(s)
4-phenylpyridine-N-oxide	1 ounce(s)
2,5-Dihydroxybenzaldehyde	1 ounce(s)
Tetrabutylammonium dihydrogen phosphate	1 ounce(s)

Waste	Weight/Quantity
Polyacrylamide	.25 pound(s)
4,4-Isopropylidene diphenol	1 pound(s)
Tetraethylammonium iodide	1 ounce(s)
Cyanoguanidine	1 pound(s)
Sodium citrate	4 ounce(s)
Lubrizol 2404	1 pound(s)
2-phenylimidazole	.25 pound(s)
Zinc Formaldehyde sulfoxalate	8 ounce(s)
Ammonium phosphate monobasic	5 pound(s)
Calcium Chloride	6 pound(s)
Sodium meta-bisufite	5 pound(s)
Ammonium sulfate	5 pound(s)
Silica gel	4 pound(s)
Sodium Alkylarylsulfonate	1 pound(s)
Magnesium oxide	1 pound(s)
Ammonium sulfamate	1 pound(s)
Lithium phosphate	.5 pound(s)
Titamium dioxide	1 pound(s)
Sodium hexafluorosilicate	1 pound(s)
Lithium chloride	1 pound(s)
Iron chloride tetrahydrate	.5 pound(s)

Waste	Weight/Quantity
Zinc sulfoxylate	.5 pound(s)
Manganese chloride	.25 pound(s)
Cuprous Oxide	1 pound(s)
Lithium iodide	.5 pound(s)
Ferrous sulfate	4 ounce(s)
Lanthanum chloride	2 ounce(s)
Lanthanum fluoride	1 ounce(s)
Sodium tungstate dihydrate	4 ounce(s)
Copper bromide	4 ounce(s)
Ammonium hexafluorophosphate	4 ounce(s)
Tetraammine zinc tetrafluoroborate	4 ounce(s)
Tin oxide	.5 pound(s)
Sodium fluoride	1 pound(s)
Anhydrous stannous chloride	.5 pound(s)
Stannous oxide	1 pound(s)
Copper Chloride hydrate	1 pound(s)
Barium fluoride	4 ounce(s)
Magnesium Bromide	1 pound(s)
Zirconium oxide	2 pound(s)
Lead carbonate	4 ounce(s)
Tin chloride, anhydrous	.5 pound(s)

Waste	Weight/Quantity
Zinc oxide	1 pound(s)
Calcium Bromide, monohydrate	4 ounce(s)
Zinc chloride	1 pound(s)
Ammonium bromide	.5 pound(s)
Lithium fluoride	1 pound(s)
Tin chloride dihydrate	1 pound(s)
Barium chloride	1 pound(s)
Baron oxide	1 pound(s)
Barium silicate	4 ounce(s)
Sodium bisulfite (dried)	1 pound(s)
Copper phthalocyanide (blue pigment)	.25 pound(s)
Per acetic acid	250 gram(s)
Lithium nitrate	100 gram(s)
Zirconium diperchlorate oxide	500 gram(s)
Chromium trioxide	500 gram(s)
Calcium hypochlorite	250 gram(s)
Tris (2,2-Bypyridyl) Cobalt (11) perchlorate	1 gram(s)
Potassium pensulfate	500 gram(s)
Sodium pensulfate	500 gram(s)
Zinc nitrate hexahydrate	100 gram(s)
Lithium nitrate	50 gram(s)

Waste	Weight/Quantity
Bismuth nitrate	500 gram(s)
Zirconyl pensulfate	2 Kg(s)
Potassium dichromate	1 Kg(s)
Magnesium metal	6 pound(s)
Aluminum paste	9 pound(s)
Aluminum isopropoxide	2 pound(s)
Sodium dithionite	1 pound(s)
2-Butyne-1,4-diol	2 pound(s)
Nickel flake	5 pound(s)
Diphenylsilanediol	4 ounce(s)
Mixed metal powders	.25 pound(s)
Bismuth powder	.25 pound(s)
Magnesium bromide etherate	1 ounce(s)
Cobalt powder	.25 pound(s)
Desmodur N3390 (Aliphatic polyisocyanate)	1 gallon(s)
Desmodur N3200 (Aliphatic di isocyanate)	2 gallon(s)
Mondur TD-80 (Toluene di isocyanate)	1 gallon(s)
Isocyanate in adsorbent	2 gallon(s)
Mondur XP-743 (Diphenyl methone di isocyanate)	1 gallon(s)
Isocyanatoethyl methacrylate	.25 gallon(s)
Desmophen 570A-80 (polyester resin)	1 gallon(s)

Waste	Weight/Quantity
Adipoly Chloride	500 gram(s)
N-octenyl succinic anhydride	300 gram(s)
Diethyl chlorophosphate	500 gram(s)
Dichloro-p-xylene	100 gram(s)
Sebaroyl chloride	250 gram(s)
Bromotrimethylsilane	5 gram(s)
Borontrifluoride	100 gram(s)
Trimethyl acetic acid	200 gram(s)
Fluorochemical Acid	130 gram(s)
Borontrifluoride phosphoric acid	250 gram(s)
Dibutyltin dichloride	50 gram(s)
Isobutyric anhydride	500 gram(s)
Trimethyl Amine	1.5 Kg(s)
Isophthaloyl dichloride	500 gram(s)
Silicon Chloride	1 Kg(s)
Isobutyric acid	500 gram(s)
Glycolic acid	1 Kg(s)
Decanoic acid	1 Kg(s)
5% Thiosulphate solution	750 gram(s)
Phosphate buffer	500 gram(s)
Trimethyl acetic acid	500 gram(s)

Waste	Weight/Quantity
4-chlorobutyrl chloride	500 gram(s)
Trichloroacetyl chloride	100 gram(s)
Dichloroacetyl chloride	100 gram(s)
Glutonic acid (50%)	250 gram(s)
RCI accelerator	200 gram(s)
Cobalt hydroxide	250 gram(s)
Potassium fluoride	250 gram(s)
Barium hydroxide, 8-hydrate	450 gram(s)
Sodium silicate	450 gram(s)
Lithium Hydroxide	5 gram(s)
Benzoyl peroxide	5 gram(s)
Cumene hydroperoxide	100 gram(s)
Methyl ethyl ketone peroxide solution	200 gram(s)
Di-t-butyl peroxide	100 gram(s)
Methylene Bis(4-cyclohexyl isocyanate)	3.5 gallon(s)
Blocked poly isocyanate	3 gallon(s)
1,6-hexamethylene di isocyanate	1 quart(s)
Methylene di isocyanate	1 quart(s)
Isocyanate adduct	.5 pint(s)
Ferrous phosphide	10 pound(s)
Cyuranic Chloride	1 gallon(s)

Waste	Weight/Quantity
Polyurethane coatings	1 gallon(s)
Carbon disulfide	2 gallon(s)
4-ethoyl-3-methoxyphenethyl alcohol	4 ounce(s)
Methylene chloride	5 ounce(s)
2,2-thiodiethanol	2 ounce(s)
15-crown-5	1 ounce(s)
FC-170 (surfactant)	1 ounce(s)
Aziridine	2 gallon(s)
Isoocytyl-3-mercaptopropinate	.5 pint(s)
Mercaptopropyltrimethoxysilane	1 pint(s)
Isooctyl-3-mercaptoacetate	.5 pint(s)
N,N-Dimethylformamide	.5 pint(s)
1-Dodecanethiol	.5 pint(s)
Pyridine	1 pint(s)
Ferric Chloride	1 Kg(s)
Hydroxylamine hydrochloride	100 gram(s)
Triphenylphosphine oxide	4 ounce(s)
Sodium hydrosulfite	.5 pound(s)
Iodotrimethylsilane	5 gram(s)
Allylphenyl sulfone	1 ounce(s)